



**CHAITANYA BHARATHI
INSTITUTE OF TECHNOLOGY (A)**

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COMMITTED TO
RESEARCH,
INNOVATION AND
EDUCATION

44
years

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3.4.4 Number of books and chapters in edited volumes/books published per teacher during the last five years (5)

Year	2021-22	2020-21	2019-20	2018-19	2017-18
Number	85	139	66	57	55

3.4.4 Number of books and chapters in edited volumes/books published per teacher during the last five years (5)

3.4.4.1: Total number of books and chapters in edited volumes / books published, and papers in national/international conference-proceedings year wise during last five years

Sl. No.	Name of the teacher	Title of the book/chapters published	Title of the paper	Title of the proceedings of the conference	Year of publication	ISBN/ISSN number of the proceeding	Whether at the time of publication Affiliating Institution Was same Yes/NO	Name of the publisher
1	Thanikanti Sudhakar Babu	NA	An Effective EMI Mitigation Technique Using Chaotic PWM for Interleaved Boost Converter	Advances in Power, Signal, and Information Technology (APSIT)	2021	978-1-6654-2506-3	Yes	IEEE
2	Thanikanti Sudhakar Babu	NA	Universal Motor with On-Off Controller for Washing Machine Application	Advances in Power, Signal, and Information Technology (APSIT)	2021	978-1-6654-2506-3	Yes	IEEE
3	B.Suresh Kumar	NA	Power Quality Concerns in Implementing Smart Distribution Grid Applications	Emerging Trends in Circuit branch Technologies and Applications	2021	978-1-68576-062-5	Yes	Institute of Scholars

4	N. V. Phanendrababu	Optimal Selection of Phasor Measurement Units	Wide Area Power Systems Stability, Protection, and Security	International	2021	978-3-030-54275-7	Yes	Springer Textbook: Wide Area Power Systems Stability, Protection, and Security
5	P.V.Prasad	NA	Optimal distributed generator and shunt capacitor in radial distribution system using particle swarm optimization	Emerging Trends in Circuit branch Technologies and Applications	2021	978-1-68576-062-5	Yes	Institute of Scholars
6	M Balasubbarreddy, P Venkata Prasad	NA	AI based Cyber-attack Resistant Microgrid System with IRNSS Synchronization	Emerging Trends in Circuit branch Technologies and Applications	2021	978-1-68576-062-5	Yes	Institute of Scholars
7	M Balasubbarreddy	NA	Power quality conditioning by UPQC using dq theory	Emerging Trends in Circuit branch Technologies and Applications	2021	978-1-68576-062-5	Yes	Institute of Scholars
8	Dr.N.S.M .Sarma Dr.M.L.N .Acharyulu T.Ramaswamy,	NA	Investigation on routing methods in low power VLSI Scenario	Investigation on routing methods in low power VLSI Scenario	2021	978-613-8-95526-9	Yes	Scholars press, Europe

9	Nagadevi Darapureddy	“Integration of Artificial Intelligence And Internet of Things with Blockchain Technology”	International Conference on Computational and Bio Engineering	NA	2021	978-981-16-1940-3	Yes	Springer
10	NeerajaB andi, R. Ramavath and S. K. Meda	"Design and Analysis of PTL based Basic gates and Adder with Improved Performance,"	International Conference on Recent Trends on Electronics, Information, Communication & Technology (RTEICT)	NA	2021	978-1-7281-9772-2	Yes	IEEE

11	D.Sony, Dr.D.Krishna Reddy, Dr.P.Naveen Kumar	"Statistical Characterization of IRNSS Satellite Clock Error for Receiver Autonomous Integrity"	"Third International Conference Soft Computing and Signal Processing" (ICSCSP- 2020)	NA	2021	978-981-33- 6912-2	Yes	Springer
12	T.Sridher, A.D.Sarma, P.Naveen Kumar and K.Lakshmana	"Results of Indoor Localization using the Optimum Pathloss Model at 2.4 GHz"	URSI GASS 2020	NA	2021	978-9-4639- 6800-3	Yes	IEEE
13	Komal Kumar S, Supraja Reddy A, HariChandana R, Sarma A.D	"Simplistic Spoofing of GPS Enabled Smartphone"	IEEE WIE Conference on Electrical and Computer Engineering	NA	2021	978-1-6654- 1917-8	Yes	IEEE

14	Dr.K Saritha, Dr.K Madhavi, Nagadevi Darapureddy	NA	“An Insight into Women Academicians problems in the Covid-19 Pandemic”	Role of women in Self-Empowerment and Leadership (RWSL-2020)	2021	978-93-91515-96-5	Yes	B P International,
15	Nagadevi Darapureddy, Dr. NagaprakashKaratapu, Dr. Tirumala KrishnaBattula	NA	“Comprehensive study on Content Based Medical Image Retrieval”	Proceedings of the NCRT-ECE-2020	2021	73978-93-91215-96-5	Yes	B P International,
16	G. Mallikharjuna Rao	NA	Determination of Information Security Using Cryptography and Image Steganography	Advanced Aspects of Engineering Research	2021	978-93-91215-96-5	Yes	B P International,
17	N Alivelu Manga	NA	Performance Analysis of Algorithms for NavIC Signal Acquisition	Current Topics on Mathematics and Computer Science	2021	978-93-90888-15-3	Yes	B P International
18	Dr. M. Ramana Reddy	New Approaches in Engineering Research	Design of Static CMOS 16 Bit High Speeds and Low Power Consumption Hybrid Adder Circuit using Brent Kung Adder	NA	2021	978-93-91473-60-0	Yes	B P International

19	Nagadevi Darapureddy	Methodologies and Applications of Computational Statistics for Machine Intelligence	A Comprehensive study on Artificial Intelligence and Robotics for Machine Intelligence	NA	2021	9.7818E+12	Yes	IGI Global
20	Dr. K Suman	Next-Generation Antennas: Advancements and Challenges	Reconfigurable Antennas	NA	2021	978-1-119-79186-7	Yes	Wiley-Scrivener imprint
21	P. Sathish and D. Krishna Reddy	NA	Study of IRNSS Receiver Doppler Positioning in Kinematic Conditions	Recent Developments in Engineering Research	2021	978-93-90149-67-4	Yes	B P International
22	Varala Pasula Nikhila, N. Alivelu Manga	NA	“Design and Analysis of Approximate Lower Part OR Adder for Low Power Computations”	1 st International Conference on Emerging Trends in Circuit-branch Technologies and Applications (ETCTA-2021)	2021	2575-7288	Yes	IEEE

23	Jyothsnavi Kuppili , Abhiram MSD , N. Alivelu Manga	NA	“ Design of Vedic Mathematics based 16 bit MAC unit for Power and Delay Optimization”	IEEE & IAS Technically Co-Sponsored 4 th Biennial International Conference on Nascent Technologies in Engineering ICNTE - 2021	2021	978-1-7281-9061-7	Yes	IEEE
24	V. V. Satyanarayana Tallapragada1, N.Alivelu Manga, M. V. Nagabhus hanam, M. Venkatan aresh	Smart Innovation, Systems and Technologies	“Greek Handwritten Character Recognition using Inception V3”,	3 rd International Conference on Smart Systems: Innovations in Computing	2021	978-981-16-2876-4	Yes	Springer
25	D.Sony, S.Chandravadhan, Dr.D.Krishna Reddy, Dr.P.Navaneen Kumar	NA	"Satellite Selection Algorithm for RAIM Algorithms"	International Conference On Emerging Trends In Circuit -Branch Technologies And Applications-2021"	2021	NA	Yes	CBIT

26	D.Sony, JB Farheen, Dr.D.Kris hna Reddy, Dr.P.Nav een Kumar	NA	"Integrity Monitoring of GNSS using Ztest"	International Conference On Emerging Trends In Circuit -Branch Technologies And Applications-2021"	2021	NA	Yes	Nova Science Publishers Inc, New York.
27	Sree Naresh Krishna Chama, Satyanara yana Katukojw ala, Supraja Reddy Ammana, Shivank Agarwal, Varun Kumar Reddy and A.D.Sarm a	NA	"Design and Development of NavIC and GPS based Geolocation System for CO2 Monitoring"	International Conference on Innovative Practices in Technology and Management	2021	978-0-7381- 3289-1	Yes	IEEE

28	V. V. Satyanarayana Tallapragada, I. Kullayamma, G. V. Pradeep Kumar, M. Venkatanarsh	NA	"Significance of Internet of Things (IoT) in Health Care with trending smart Application"	3rd International Conference on Smart Systems: Innovation in Computing	2021	978-981-16-2877-1	Yes	Springer
29	A.D. Sarma, K. Lakshmana and T. Sridher	NA	'A Simple Model for Forecasting Confirmed COVID-19 Cases in a Given System'	International Conference on Emerging Trends in Circuit-branch Technologies and Applications (ETCTA-2021)	2021	978-981-16-2877-1	Yes	Springer
30	N. R. Misra, S. Kumar and A. Jain	NA	A Review on E-waste: Fostering the Need for Green Electronics	International Conference on Computing, Communication, and Intelligent Systems (ICCCIS),	2021	978-1-7281-8529-3	Yes	IEEE
31	K.Tarun, N. Vinayreddy, T. Akhilesh, P. Sathish	NA	" Analysis of Doppler Collision using Supervised Machine Learning"	Fifth IEEE International Conference on Intelligent Computing and Control Systems (ICICCS 2021)	2021	978-0-7381-1326-5	Yes	IEEE

32	Nikhila Raj Nitta, Vys hnavi Cheedepudi, Abhishek Adire, T Sridher	NA	"Preliminary Result of COVID-19 Detection through Chest X-Ray using Artificial Intelligence"	International Conference on Emerging Trends in Circuit-branch Technologies and Applications (ETCTA-2021)	2021	NA	Yes	JRIET
33	Satya Sai Kiran Talla, T. Sridher	NA	A Prototype Wi-Fi Controlled Car using NodeMCU	International Conference on "Emerging Trends in Circuit branch Technologies and Applications"	2021	NA	Yes	JRIET

34	Sree Naresh Krishna Chama, Satyanarayana Katukojwala, Supraja Reddy Ammana, Shivank Agarwal, Varun Kumar Reddy and A.D.Sarma	NA	"Design and Development of NavIC and GPS based Geolocation System for CO2 Monitoring"	International Conference on Innovative Practices in Technology and Management	2021	978-0-7381-3289-1	Yes	IEEE
35	Sathish P Alivelu Manga N	Handbook of Smart Materials, Technologies and Devices	IoT-Based Smart Farming System Using MQTT Protocol and ML Algorithms	NA	2021	978-3-030-58675-1	Yes	Springer

36	Dr.Vinodh Kumar Minchula, Sr.Prof. Gottapu Sasibhushana Rao	Antenna Systems	Performance analysis of Multiple Antenna Systems with New Capacity Improvement Algorithm for MIMO based 4G/5G Systems	NA	2021	978-1-83968-829-4	Yes	IntechOpen publisher
37	Amgoth Hariprasad, Supraja Reddy Ammana	Generation and Evaluation of IRNSS Navigation data for Spoofing Applications	Research Day	NA	2021	NA	Yes	CBIT
38	Asra Fathima, D.Nagadevi	Implementation of Deep Learning Architectures for Classification of Skin Lesions	Research Day	NA	2021	NA	Yes	CBIT

39	Nomula Rajitha, A.Satyavathi	Implementation of Deep Neural Networks for Multi-Classification of Brain Tumor Images	Research Day	NA	2021	NA	Yes	CBIT
40	Kukatla Ramprasad, G.V. Pradeep Kumar	Implementation of Impatient Backoff Algorithm for wireless Adhoc networks	Research Day	NA	2021	NA	Yes	CBIT
41	Mohammed Waseem, N Venkata Narsimha Reddy, Nischal Y, T.Sridher	The basaltic analysis for safeguarding structures nearby CBIT premises	Research Day	NA	2021	NA	Yes	CBIT

42	N. Alivelu Manga,S. Sai Sandeep Kumar	Design And Simulation of Approximate Multiplier for Low Power Applications	Research Day	NA	2021	NA	Yes	CBIT
43	Mohd Ziauddin Jahangir, ChandraSekhar Paidimarry, Md. Sikander, M.V.Shravanthi	Advances in Signal Processing and Communication Engineering	DESIGN OF AN ALL DIGITAL PHASE-LOCKED LOOP USING CORDIC ALGORITHM	Lecture Notes in Electrical Engineering	2021	978-981-19-5550-1	Yes	Springer
44	M.Venkata Sireesha, P.V.Naganjaneyulu, K.Babulu	NA	Hyperspectral Image Segmentation and Classification using Hybrid IB-CDA with Least Square Unmixing	6th International Conference on Communication and Electronics Systems (ICCES-2021)	2021	978-0-7381-1405-7	Yes	IEEE

45	Pappu Gayathri Devi, Sunkara Chandana, P. Sathish	NA	Design and Development of Android Application for Virtual Birthday Present	6th International Conference on Communication and Electronics Systems (ICCES-2021)	2021	978-0-7381-1405-7	Yes	IEEE
46	N. Dhanalakshmi, Chanikya Mammindlapalli, Dinesh Reddy Sunkari, Rohith Reddy Salguti	Advances in Signal Processing and Communication Engineering pp	Design of IoT based Transmission Line Fault Monitoring System	Lecture Notes in Electrical Engineering	2021	978-981-19-5550-1	Yes	Springer
47	Supraja Reddy Ammana	IEEE WIECON-ECE 2021	Development of Simple Software Receiver For IRNSS L5 Signal	NA	2021	978-1-6654-7849-6	Yes	IEEE
48	Dr. Y. Ramadevi, T. Prathima, Sk. Afsar	NA	Automatic Framework of Music Ringtone Extraction from Tollywood Songs	NA	2021	0976-2876	Yes	Indian J.Sci.Res

49	Satyanarayana Nimmala, Dr. Y. Ramadevi, Srinivas Naik Nenavath and Ramalingaswamy Cheruku	Advances in Intelligent Systems and Computing	Predicting High Blood Pressure using Decision Tree Based Algorithm	Advances in Machine Learning and Data Science	2021	978-981-10-8569-7	Yes	Springer
50	M. Swamy Das, Kovvur Ram Mohan Rao, P. Balaji	Innovations in Electronics and Communication Engineering, Springer	Neural based Hit-Count Feature Extraction Method for Telugu OCR	NA	2021	1876-1100	Yes	Springer
51	E. Raju, Dr. Y. Ramadevi, K. Sravanthi	NA	CCLPA: A Clustering Coefficient based Label Propagation Algorithm for Unfolding Communities in Complex Networks	IEEE International Conference on Communication and Electronics Systems (ICCES)	2021	978-1-5090-5014-7	Yes	IEEE

52	Dr. K. Sagar	NA	A Survey on security issues with IOT	International conference on Materials, Applied Physics and Engineering (ICMAE)	2021	0094-243X	Yes	AIP Conference Proceedings
53	Sridevi, Ramya Krishna	NA	A Novel Approach for Detection of Copy-Move Forgery Detection using Transform Domain	Second International Conference on Inventive Communication and Computational Technologies (ICICCT)	2021	978-1-5386-1974-2	Yes	IEEE
54	Kunal Teeda, Nandini V, T.Sridevi	NA	Comparative Analysis of Data Mining Models for Crop Yield by Using Rainfall and Soil Attributes	Second International Conference on Inventive Communication and Computational Technologies (ICICCT)	2021	978-1-5386-1974-2	Yes	IEEE
55	Kolla Morarjee, T VenuGopal	Lecture Notes in Networks and Systems (LNNS)	Region based Semantic Image Retrieval using Ontology	Computer Communication, Networking and Internet Security	2021	2367-3370	Yes	Springer
56	Kolla Morarjee, T Venu Gopal	Lecture Notes in Electrical Engineering (LNEE)	Region based Semantic Image Clustering using Positive and Negative Examples	International Conference on Communications and Cyber Physical Engineering	2021	1876-1100	Yes	Springer

57	Kalpana Ettikeyala, Y Vijayalata, M Chandramohan	NA	Efficient Time Shared Task Scheduler for Cloud Computing	IEEE International Conf. on Information, Communication, Instrumentation and Control (ICICIC-2017)	2021	ISBN: 978-1-5090-6313-0 ISBN: 978-1-5090-6314-7	Yes	IEEE
58	Kalpana Ettikeyala, Y Vijayalata, M Chandramohan	NA	Virtual Machine Schedulers for Cloud Computing	IEEE International Conf. on Information, Communication, Instrumentation and Control (ICICIC-2017)	2021	ISBN: 978-1-5090-6313-0 ISBN: 978-1-5090-6314-7	Yes	IEEE
59	T Prathima, A Govardhan, Dr.Y Ramadevi	Advances in Intelligent Systems and Computing bo	Rough Set-Based Classification of Audio Data	Proceedings of the Third International Conference on Computational Intelligence and Informatics	2021	978-981-15-1479-1	Yes	Springer
60	SaiSupriya, R. Ravinder Reddy, Dr. Y. Ramadevi	Advances in Intelligent Systems and Computing boo	A Survey on Emotion's Recognition Using Internet of Things	First International Conference on Artificial Intelligence and Cognitive Computing p	2021	978-981-13-1580-0	Yes	Springer

61	Dr. K. Sagar	IOP Conference series material science and engineering	A Relative Survey on Handover techniques in Mobility Management	International Conference on Startup Ventures : Technology Developments and future Strategies (SV-TDFS)	2021	012-207	Yes	IOP Publishing ltd
62	S. Ramana, N Bhaskar, M. V. Ramana Murthy, and S. China Ramu	NA	Mobile Commerce using ECC and MQTT Protocol	International Conference on Innovative Applied Energy, IAPE-19, Oxford United Kingdom	2021	978-1-912532-05-6	Yes	JRIET
63	K Vihar, T Sridev	Advances in Intelligent Systems and Computing book	Image Filter selection, Denoising and Enhancement Based on Statistical Attributes of Pixel Array	6th International Conference on Advanced Computing, Networking, and Informatics. NIT Silchar [ICACNI	2021	978-981-13-9682-3	Yes	Springer

64	Dr R. Ravinder Reddy, Ch Mamatha, R Govardhan Reddy	NA	A Review on Machine Learning Trends, Application and Challenges in Internet of Things	International Conference on Advances in Computing, Communications and Informatics (ICACCI)	2021	978-1-5386-5315-9	Yes	IEEE
65	Supriya, Dr R. Ravinder Reddy, Dr.Y Ramadevi	First International Conference on Artificial Intelligence and Cognitive Computing . Springer, Singap	A Survey on Emotion's Recognition Using Internet of Things	Advances in Intelligent Systems and Computing bo	2021	978-981-13-1580-0	Yes	Springer
66	Sangeeta Gupta	LNNS Springer Series	Unstructured Data Analysis with Passphrase Based Rest Api Nosql for Bigdata in Cloud	International Conference on Innovations in Computer Science and Engineering	2021	978-981-13-7082-3	Yes	Springer
67	Kumar and S. Gupta	NA	A Secure Technique of Image Fusion Using Cloud Based Copyright Protection for Data Distribution	IEEE 8th International Advance Computing Conference	2021	978-1-5386-6679-1	Yes	IEEE

68	G. Kavita, Ch.Vijaya Lakshmi mi ,D.Avanth ika Shree ,Kavya Thati	Advances in Informatio n Technolog y and Computing National Conference	Detecting fraud in cyber banking using feature selection and genetic algorithm	NA	2021	2349-5162	Yes	JETIR
69	T. satya Kiranmai	Advances in Intelligent Systems and Computing book	Instrument Recognition in Polyphonic Music Using Convolutional Recurrent Neural Networks	International Conference on Intelligent Computing, Information and Control Systems	2021	978-981-15- 8443-5	Yes	Springer
70	S. Rakesh	Sign Language Recognitio n using Convolutio nal Neural Networks	Sign Language Recognition using Convolutional Neural Networks	Innovative Data Communication Technologies and Application, Lecture Notes on Data Engineering and Communications Technologies	2021	978-981-15- 9651-3	Yes	springer
71	Sirisha Alamanda	NA	Stock Price Prediction on News Data and Market Data Using ML Techniques	International Conference On Emerging Trends In Circuit-Branch Technologies And Applications	2021	ISBN: 978-1- 68576-062-5	Yes	INSC PUBLISHING HOUSE (IPH)

72	Sirisha Alamanda	NA	Survey on Diabetic Retinopathy Detection	International Conference On Emerging Trends In Circuit-Branch Technologies And Applications	2021	ISBN: 978-1-68576-062-5	Yes	INSC PUBLISHING HOUSE (IPH)
73	Santhosh Voruganti	International Conference on Smart Data Intelligence (ICSMDI 2021)	Visual Question Answering with External Knowledge	NA	2021	NA	Yes	Univeristy press
74	Dr. V. Swapna	Green sustainable process for chemical and environmental Engineering and Science	Book Chapter	Book chapter	2021	978-0-12-819539-0	Yes	Elsivier

75	Dr. Harsha Nagar	Microbial Fuel Cell: A Potential Solution for Desalination	Book Chapter	Book Chapter	2021	9780323900409, 0323900402	Yes	Taylor and Francis
76	B Mishra	in the book "Environmental Microbiology and Biotechnology"	Film Based Packaging for Food Safety and Preservation: Issues and Perspectives	NA	2021	978-981-15-7492-4	Yes	Springer Nature
77	B Mishra, R Yadavalli	in the book "Waste Biorefinery- Value Addition Through Resource Utilization"	Petroleum waste biorefinery: A way towards circular economy	NA	2021	978-012-82-1879-2	Yes	Elsevier

78	CN Reddy, Y Vineetha, R Yadavalli, B Mishra	in the book "Nanomaterials- Application in Biofuels and Bioenergy Production Systems"	Recent advancements and challenges in nanomaterial applications in biofuel production	NA	2021	978-012-82-2401-4	Yes	Elsevier
79	C. Nagen dranatha Reddy, R Yadavalli	in the book "Biorefineries-A step towards renewable and clean energy"	Electro-Fermentation of High value organic acids	NA	2021	978-981-15-9592-9	Yes	Springer
80	Dr Y Srinivasa Reddy	Advances in Applied Sciences, Humanities and Technology to overcome Global Disasters (Edited Book)	Microstructure of NdCaCoO ₃ ($0 \leq x \leq 0.4$)	NA	2021	ISBN: 978-93-91842-09-3	Yes	Kaav publications

81	N. Aruna	NA	Detection of copper by localized surface Plasmon resonance based fiber optic technique	SPIE Proceedings 11772, Optical Sensors 2021	2021	0277-786X (print) 1996-756X (web)	Yes	SPIE Proceedings
82	N. Aruna	NA	Multi U-bent cladded POF sensors for refractive index measurement	SPIE Proceedings 11772, Optical Sensors 2022	2021	0277-786X (print) 1996-756X (web)	Yes	SPIE Proceedings
83	Dr.K.Laxmi	NA	Antiepileptic Drug Phenobarbital: A Chemskech Study	New Innovations in Chemistry and Biochemistry	2021	Print ISBN Number: 978-93-91473-81-5 E ISBN Number: 978-93-91473-88-4 DOI: 10.9734/bpi/nicb/v1	Yes	B P International
84	Dr.K.RA MESH	A TO Z Organic Named Reactions	NA	NA	2021	978-93-90471-61-4	Yes	Integrated Publication, India

85	D.Saritha, Gubbala V. Ramesh, N. Mahendar Reddy	Advances in Sustainabil ity Science and Technolog y.	Modern progression in anode materials for lithium-ion batteries: Review	Proceedings of Fourth International Conference on Inventive Material Science Applications p	2021	ISBN: 978- 981-16-4320- 0, 978-981- 16-4321-7	Yes	Springer
86	D. Saritha, N. Mahendar Reddy, * Gubbala V. Ramesh,	Advances in Sustainabil ity Science and Technolog y.	Ordered Pt3M (M= Early d- block Metals) Intermetallic Nanocrystals: Synthesis and Electrocatalysis	Proceedings of Fourth International Conference on Inventive Material Science Applications	2021	ISBN: 978- 981-16-4320- 0, 978-981- 16-4321-7	Yes	Springer
87	D. Saritha, N. Mahendar Reddy, Gubbala V. Ramesh, K.Rames h	2D Functional Nanomater ials: Synthesis, Characteriz ation, and Applicatio ns	2D Nanomaterials for Photocatalysis and Photoelectrocatalysis	NA	2021	ISBN 978-1- 83880- 554-8	Yes	ACS publications

88	Dr.T.V.S urendra	Materials Research Foundations	Bioinspired Nanomaterials for Energy and Environmental Applications	NA	2021	ISBN 978-1- 64490-183-6	Yes	Materials Research Forum LLC
89	Dr.K.Lax mi	NA	Determining the Properties of Phenobarbital an Antiepileptic Drug Using Chemcalise Software	Challenges and Advances in Chemical Science , Vol. 6, 23 October 2021 , Page 10- 21	2021	ISBN 978- 93-5547-100- 0 (Print) ISBN 978- 93-5547-106- 2 (eBook)	Yes	B P International
90	Dr.K.Lax mi	NA	Structural Aspects of Indoline-2,3-dione-3- oxime: An Approach towards Experimental and Theoretical Perspectives	New Innovations in Chemistry and Biochemistry Vol. 6 . Page -99-109	2021	FIRST EDITION 2021 ISBN 978-93-5547- 091-1 (Print) ISBN 978- 93-5547-143- 7 (eBook) DOI: 10.9734/bpi/ nicb/v6	Yes	B P International
91	P. Kiran	NA	Chapeter: G-jitter effects on chaotic convection in a fluid layer	Advances in condensed matter and amterial physics	2021	ISBN 978-1- 83880- 554-8	Yes	IntechOpen

92	P. Kiran	NA	The effect of gravity driven thermal instability in the presence of applied magnetic field and internal heating	The effect of gravity driven thermal instability in the presence of applied magnetic field and internal heating	2021	0094-243X	Yes	AIP Conference Proceedings
93	B Lavanya	Techno-Societal 2020.	Students Perception and Satisfaction Towards ICT Enabled Virtual Learning	International	2021	Print: 978-3-030-69920-8, Online: 978-3-030-69921-5.	Yes	Springer cham
94	B Lavanya	Emerging Patterns and Innovations in Massive Open Online Courses (MOOCs)	Role of stakeholder in promoting MOOCs	International	2021	978-93-5433-969-1.	Yes	Himayala Publishing House Pvt Ltd
95	Dr Sowmya Kethi Reddi	PERSPECTIVES ON BUSINESS MANAGEMENT	An Analytical Study of FDI and its Impact on Indian Economy	BookChapter	2021	978-93-90996-03-2	Yes	Archers & Elevators publishing house
96	Mandakini Paruthi	Perspectives on Business Management	Social Media Branding and its effect on Brand Loyalty”	BookChapter	2021	978-93-90996-03-2	Yes	Archers & Elevators publishing house

97	Mandakini Paruthi	Research Column-II (Multi-disciplinary)	An Assessment of Financial Planning for Salaried Employee in Financially Distressed Times	BookChapter	2021	978-81-947764-8-2	Yes	Recherche Foundation
98	Mandakini Paruthi	Emerging Trends and Issues in Economics & Finance	A Study on Financial Distress of 3 Automobile Companies in India- Using Altman's Z Score	BookChapter	2021	978-81-947735-5-9	Yes	Sharp Mind Publishers
99	B.SRINI VASA S P KUMAR	NA	Data Analytics using Variational Autoencoder using IoT	1st International E-conference on Management, Science and Technology	2021	NA	Yes	Global Conference Hub
100	Dr D Lakshmi Sreenivasa Reddy	Advances in Decision Sciences, Image Processing, Security and Computer Vision	Thyroid Diagnosis Using Multilayer Perceptron	Learning and Analytics in Intelligent Systems bo	2020	978-3-030-24322-7	Yes	Springer

101	Dr. M. Trupthi	NA	COVID-19 Time Series Forecasting of Daily Cases, Deaths Caused and Recovered Cases using Long Short Term Memory Networks	2020 IEEE 5th International Conference on Computing Communication and Automation (ICCCA)	2020	978-1-5421-5371-1	Yes	IEEE
102	Ms. T. Satya Kiranmai	NA	Smart Water Consumption Monitoring System using IoT, Android and Cloud Computing	Proceedings of the Fifth International Conference on Communication and Electronics Systems (ICCES 2020)	2020	978-1-7281-5371-1	Yes	IEEE
103	Mr U. Sairam	NA	Multi-Functional Blind Stick for Visually Impaired People	IEEE, Fifth International Conference on Communication and Electronics Systems (ICCES 2020)	2020	978-1-7281-5371-1	Yes	IEEE
104	Deepa R	Journal of Physics: Conference Series	Forex Exchange using Big Data Analytics	International Conference on Advances in Computational Science and Engineering 2020(ICACSE 2020)	2020	1964	Yes	IOP Publishing ltd
105	Dr. M. Trupthi	Advances in Intelligent Systems and Computing	A System for Efficient Examination Seat Allocation	Advances in Intelligent Systems and Computing book series Data Engineering and Communication Technology	2020	978-981-15-1097-7	Yes	Springer

106	Deepa R	Journal of Physics: Conference Series	Applying Data Mining Technique to predict trends in Air pollution in Mumbai	International Conference on Advances in Computational Science and Engineering 2020(ICACSE 2020)	2020	1964	Yes	IOP Publishing ltd
107	Dr. M. Trupthi	4th INTERNATIONAL CONFERENCE OF EMERGING TECHNOLOGIES 2023, BELGAUM, INDIA	Estimating Savings Potential of Solar Energy	International Conference for Emerging Technology (INCET)	2020	7281-7029-9	Yes	IEEE
108	Deepa R	Journal of Physics: Conference Series	Movie recommendation System using clustering mining with python	International Conference on Advances in Computational Science and Engineering 2020(ICACSE 2020)	2020	42073	Yes	IOP Publishing ltd

109	Dr. N.V. Srinivasulu	First international Conference on advanced light materials and structures (ICALMS-2K20)	Effect of Micro filler micro filler materials on mechanical properties of epoxy fabric composites	ICALMS-2k20	2020	22147853	Yes	Materials Today: Proceedings
110	Ch.Indira Priyadarisni	2nd International Conference on Recent Trends in Engineering Technology and Management	Non-premixed Combustion Analysis on Micro-Gas Turbine Combustor Using LPG and Natural Gas,	2nd International Conference on Recent Trends in Engineering Technology and Management,	2020	978-981-15-1123-3	Yes	Lecture Notes in Mechanical Engineering, Springer
111	Dr K. Jagannadha Rao	NA	An experimental investigation of self compacting concrete containing recycled concrete aggregates	International Conference on Construction Materials and Smart Structures for Sustainable Development 2020	2020	ISSN: 2366-2557	Yes	VNRVJIET

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121	M Balasubbarreddy,	NA	Hybrid Flying Squirrel Search Algorithm for solving the single objective optimization power flow problem in power system	8th International Conference on Contemporary Engineering and Technology 2020	2020	NA	Yes	Prince Shri Venkateshwara Padmavathy Engineering College

122	D.Harsha, C.Srisailam	NA	Performance enhancement of isolated forward converter using PI controller	Recent Trends in Electrical Engineering	2020	NA	Yes	MGIT, Hyderabad
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126	P. Sathish and D. Krishna Reddy	Advances in Intelligent Systems and Computing 979, Numerical Optimization in Engineering and Sciences	Predictive Data Optimization of Doppler Collision Events for NavIC System	International Conference on Numerical Optimization in Engineering and Sciences, NOIEAS 2019; Warangal; India;	2020	978-981-15-3214-6	Yes	Springer Nature Singapore
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137	V. V. Satyanarayana Tallapragada, N. Alivelu Manga, G. V. Pradeep Kumar, M. Venkata Naresh	“Mixed image denoising using weighted coding and non-local similarity”	Second International Conference on Advances in Intelligent Systems, Soft Computing & Optimization Techniques01 - 02	NA	2020	-	Yes	Springer
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139	KaithaPraveena, Perumalla Naveen Kumarb, D.Krishna Reddy, N.Santhoshd	Analysis of Ionospheric Scintillations of NavIC L5 and S - band Signals over Low Latitude Indian Region	Third International Conference on Computing and Network Communications	NA	2020	-	Yes	-
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- III. Chaotic Pulse Width Modulation
- IV. Hardware Implementation and Results
- V. Conclusion

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Abstract: In the era of industrialization, DC-DC converters attract high demand and are used in the application of renewable energy, electric vehicles, measuring instruments, portable gadgets, medical instrumentation, aerospace systems, and so on. On the other side, these high switching converters pave the way for harmful Electromagnetic interference (EMI) generation, thereby degrades the performance of the device connected to it. Thus, the reduction of EMI emission in the DC-DC converter is the need of the hour for the efficient functioning of the converter. An interleaved boost converter (IBC) is a preferable DC-DC converter for the high efficient application since they have low input current ripple, quicker transient response, and improved reliability. Hence, in this article authors proposed an effective EMI mitigation method by employing a chaotic pulse width modulation (PWM) switching technique for the enhanced performance of IBC. The proposed technique has been verified by developing a suitable FPGA algorithm for generating the chaotic PWM pulses and interfaced with a prototype of a DC-DC interleaved boost converter. The results obtained from the prototype and discussed in the user's experience. The Fast Fourier transform (FFT) analysis shows the effective suppression of conducted EMI using chaotic PWM switching than classical periodic PWM switching.

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SECTION 1. Introduction



The DC-DC converters are being used in almost every sector of the industrial world [1], [2]. It has a wide variety of applications such as battery chargers, communication systems, audio applications, measuring instruments, medical devices, and so on [3]. In addition, in most renewable energy-based applications, DC-DC converters play a major role in transferring power from one level to another. In this paper, a detailed comparative analysis on different converter topologies used for the application of energy storage systems was given in [5]. But they are affected by EMI noise which is a very serious issue in the present world. The EMI is generated by a DC-DC converter because of the elevated switching frequency which affects its performance as well as the performance of the device connected to it. During switching it is very important to suppress Electromagnetic interference, which could either be an artificial or a natural signal of disturbance that can result in an undesired response and malfunction of the device [6]. When connected to a laptop, there can be a loss of data due to interference; in addition, it gives a huge impact on healthcare devices. The other major problem occurs in the communication system where the interference causes the receiver to acquire the inappropriate signal. So, the EMI noise has to be mitigated or at least be limited to a certain amount. The permissible amount of electromagnetic interference emitted by a device is decided by some standard bodies such as IEC, CISPR, FCC, etc. The EMI governing bodies vary from nation to nation; some nations may have more than one, depending on the type of products that are emitting EMI noise. EMI or electromagnetic interference, which is defined as the high change in voltage or current (dV/dt or dI/dt) occurring in multiples of the switching frequency. The power density spectrum reflects the EMI production from the o/p voltage. The main aim is to meet the

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An Effective EMI Mitigation Technique Using Chaotic PWM for Interleaved Boost Converter

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Abstract—In the era of industrialization, DC-DC converters attract high demand and are used in the application of renewable energy, electric vehicles, measuring instruments, portable gadgets, medical instrumentation, aerospace systems, and so on. On the other side, these high switching converters pave the way for harmful Electromagnetic interference (EMI) generation, thereby degrades the performance of the device connected to it. Thus, the reduction of EMI emission in the DC-DC converter is the need of the hour for the efficient functioning of the converter. An interleaved boost converter (IBC) is a preferable DC-DC converter for the high efficient application since they have low input current ripple, quicker transient response, and improved reliability. Hence, in this article authors proposed an effective EMI mitigation method by employing a chaotic pulse width modulation (PWM) switching technique for the enhanced performance of IBC. The proposed technique has been verified by developing a suitable FPGA algorithm for generating the chaotic PWM pulses and interfaced with a prototype of a DC-DC interleaved boost converter. The results obtained from the prototype are presented and discussed in the results section. The fast Fourier transform (FFT) analysis shows the effective suppression of conducted EMI using chaotic PWM switching than classical periodic PWM switching. Thereby, the proposed technique proves the superiority of FPGA based chaotic EMI mitigation technique.

Keywords—EMI, Interleaved Boost Converter, Chaotic PWM, RCFMFD, FPGA.

I. INTRODUCTION

The DC-DC converters are being used in almost every sector of the industrial world [1,2]. It has a wide variety of applications such as battery chargers, communication systems, audio applications, measuring instruments, medical devices, and so on [3]. In addition, in most renewable energy-based applications, DC-DC converters play a major role in transferring power from one level to another, a detailed comparative analysis on different converter topologies used for the application of energy storage systems was given in [5]. But they are affected by EMI noise which is a very serious issue in the present world. The EMI is

generated by a DC-DC converter because of the elevated switching frequency which affects its performance as well as the performance of the device connected to it. During switching it is very important to suppress Electromagnetic interference, which could either be an artificial or a natural signal of disturbance that can result in an undesired response and malfunction of the device [6]. When connected to a laptop, there can be a loss of data due to interference; in addition, it gives a huge impact on healthcare devices. The other major problem occurs in the communication system where the interference causes the receiver to acquire the inappropriate signal. So, the EMI noise has to be mitigated or at least be limited to a certain amount. The permissible amount of electromagnetic interference emitted by a device is decided by some standard bodies such as IEC, CISPR, FCC, etc. The EMI governing bodies vary from nation to nation; some nations may have more than one, depending on the type of products that are emitting EMI noise. EMI or electromagnetic interference, which is defined as the high change in voltage or current (dV/dt or dI/dt) occurring in multiples of the switching frequency. The power density spectrum reflects the EMI production from the o/p voltage. The main aim is to meet the EMI regulation and to make sure the neighbouring devices are not hampered.

The proposed design is a boost converter [1] which consists of two inductors, two diodes, and two switches, other elements remain the same. This is advantageous compared to the original design as the i/p current is divided among two parallel-connected inductors to reduce the stress on a single inductor. The two switches are driven by complementary gate pulses one being ON, the other switch being OFF during that instant. It produces an output voltage greater than the voltage supplied to it. The benefits to be highlighted for interleaving mainly are modularity, high power capability, and high reliability. The use of a coupled inductor over multiple inductors is more suitable as the inductor is the most frequented and heaviest component in most power-boost converters. Other advantages of using coupled inductors include reduced winding and core. [1]

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☰ Contents

SECTION I. Introduction



In today's world, universal motors have a varied range of use such as washing machines, electric shavers, food mixers, vacuum cleaners, and boilers. The voltage range for these devices is 1.5V to 250V, with a power rating of up to 0.75 HP and speeds ranging from 3600 to 25000 rpm. Due to the high utilization of washing machines worldwide, the ownership rate is increased around 70% [1].

The required motor speed for washing machine programs is 12000 rpm with load and 18000 rpm without a load in the spin mode if the regular motor is used. Under normal conditions, these motors cannot operate at a constant speed due to their rapidly decreasing speed of torque. This runs at high speeds under moderate loads as well as at lower speeds under very heavy loads. Therefore, the goal is to build a controller for a common motor, which can sustain a 12000rpm speed with an IGBT attached in a sequence with the motor.

Considering the connection type between the winding of armature and the winding of the area, universal motors are akin to the DC sequence motors. When a DC series engine is connected to AC, it will work poorly. It's because the armature's windings have a high inductive reactance. Since the DC sequence engines' area poles are solid metallic materials, significant amounts of eddy current must be induced in the area poles. The DC sequence engine connected to AC suffers from high eddy losses. This particular issue does not exist in universal motors with laminated cores. Compensating windings are installed around the stator to reduce the armature's reaction. In comparison to a dc sequence engine, the armature of a common

engine has more cons. Furthermore, the universal motor has a much higher number of commutator segments than the dc sequence engine. The fact that higher torques are present at lower speeds is one of Universal motors key characteristics.

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Abstract— This paper presents an on-off controller for a simple motor (UM) with a PWM chopper. Standard pace operation is required during various programs of universal motors, regardless of the ton variants. The controller is designed to run in a washing machine program that uses the spin method and needs a continuous velocity of 12000rpm. A two-pole, 230V, 450W Universal engine with a minimum velocity of 400 rpm is used in this effort. To obtain the reference speed, the motor terminal voltage is controlled. The input AC source voltage is rectified in the proposed management process, and the resulting DC voltage is chopped using an IGBT to control the voltage across the engine. For frequency calculation, a sixteen-pole tachogenerator is connected to the engine shaft. A PIC 16F877A microcontroller is used to implement closed-loop regulation, which provides the switch gate heartbeat by comparing the real speed to the reference velocity. The MCT2EM optocoupler is used to achieve isolation. As compared to other management circuits, the PWM-based management circuit produces fewer harmonics, present ripple, and torque ripple. The advanced system is a simple speed controller with improved system output at a low cost. By adding a current control loop, the overall software output can be improved.

Keywords- Washing machine, universal motors, closed-loop systems, frequency measurements, Micro-controllers.

I. INTRODUCTION

In today's world, universal motors have a varied range of use such as washing machines, electric shavers, food mixers, vacuum cleaners, and boilers. The voltage range for these devices is 1.5V to 250V, with a power rating of up to 0.75 HP and speeds ranging from 3600 to 25000 rpm. Due to the high utilization of washing machines worldwide, the ownership rate is increased around 70% [1].

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Considering the connection type between the winding of armature and the winding of the area, universal motors are akin to the DC sequence motors. When a DC series engine is connected to AC, it will work poorly. It's because the armature's windings have a high inductive reactance. Since the DC sequence engines' area poles are solid metallic materials, significant amounts of eddy current must be induced in the area poles. The DC sequence engine connected to AC suffers from high eddy losses. This particular issue does not exist in universal motors with laminated cores. Compensating windings are installed around the stator to reduce the armature's reaction. In comparison to a dc sequence engine, the armature of a common engine has more coils. Furthermore, the universal motor has a much higher number of commutator segments than the dc sequence engine. The fact that higher torques are present at lower speeds is one of Universal motors key characteristics. Furthermore, of all-electric motors, the universal motor has the highest HP/weight ratio. Analysis evaluation of motors for washing machines is reported in [2]. As the usage of the washing machine is increasing in these days finding a suitable motor to enhance the efficiency is challenging task. With this target, authors in [3] presented a comparative study between PMSM and universal motor for the application of washing machines is presented.

The organizational characteristics of Universal motor are discussed in [4]. The universal motor gets a high starting torque and no-load speed. Mechanical equilibrium and switching problems are the main issues in UM. In [5], UM is directly fed from a three-phase cyclo-converter to one phase. The functionality of UM is studied at various frequencies. At lower frequencies, a smooth starting current was obtained. A different cyclo-converter frequency was also used to adjust the engine rpm. A basic MOSFET-based UM speed management. The hysteresis method is commonly used to monitor its speed is discussed in the literature [6]. In reality, [7] provides a popular CUK converter engine with a power component correction circuit. The UM impact will be altered by this circuit. Sinusoidal feedback is produced by this circuit. A common CUK converter engine with a power component correction circuit is provided in [7]. This circuit will alter UM effect. This circuit generates sinusoidal feedback. However, an additional power storage part is required. The difference between UM's working conditions under AC, DC sources is specified in [8]. The reactance of UM in AC function must consider both the resistance and the

Power Quality Concerns in Implementing Smart Distribution Grid Applications

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Abstract: Now a day the power demand increasing every passing day. The main duty of the power system is to supply their consumers with an Uninterruptable power supply but in practice, it is not happening. In the grid-like stability problem or Power Quality issues that need to be resolved. Investigation of Power Quality may be performed for each stage of the facility system at an occasional voltage level square measure principally originated from nonlinear. In the case of high voltage level, the disturbances are originated from load Variabilities in the grid.

In this project, we use renewable energy sources for better energy saving. Lots of projects are being undertaken which are able to harness power from renewable energy sources like sun and wind are considered in this paper. The compensating devices such as Distribution Static Compensator (DSTATCOM) and Dynamic Voltage Restorer (DVR) are used in this project for improving the Power Quality in Smart Grid. DSTATCOM and DVR are the devices that are a fast, flexible and efficient solution for Power Quality problems.

Keywords: Bi-directional dc-dc converter, smart grid, Battery, DSTATCOM

I. Introduction

A Smart Grid is defined as the electric grid which uses the Technology of information as well as Technology of communication to collect the data and function on information about behavior of the suppliers and the consumers in a mechanized fashion [1]. Smart Grids will provide more electricity to meet rising demand, increase the reliability, availability, and efficiency of the power grid and also able to integrate carbon-free energy sources into

power networks. A grid uses computer technology in order to

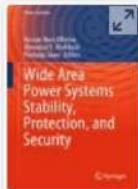


Fig 1: Block Diagram Of Smart Grid

improve communication and automation by connecting various components to the networks [3]. As an example of bulk transmission of power gathered from different generation plants shown below fig(1).

Brilliant conveyance network applications can possibly improve the exhibition of the electric force framework and furthermore offer a similar presentation for existing

So as to improve the productivity of the framework and furthermore vitality which is requested by the heap, the Smart Grid comprises of in excess of two vitality sources [5]. Photovoltaic exhibit combined with a breeze Generator is considered as one of the instances of Hybrid vitality framework. At the hour of winter, wind turbine makes more vitality, during summer the sun-based board delivers a high measure of vitality. The Energy framework (Hybrid) utilizes the corresponding idea of every one of these sources.



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Abstract

Phasor Measurement Unit (PMU) is an important device for the power system operation as it provides the synchronized data required for the monitoring, protection, and control of the power system. So, to deploy the PMUs for the power system, their optimal locations are needed to be identified. This paper presents the optimal selection of PMU set from the available sets of PMUs. Firstly, it obtains all possible sets of PMUs required for the complete observability of the power system. Then, it defines four criteria such as System Observability Index (SOI), Restorable Islands Observability Index (RIOI), Critical Bus

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Optimal Selection of Phasor Measurement Units

[N. V. Phanendrababu](#) 

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Part of the [Power Systems](#) book series (POWSYS)

Abstract

Phasor Measurement Unit (PMU) is an important device for the power system operation as it provides the synchronized data required for the monitoring, protection, and control of the power system. So, to deploy the PMUs for the power system, their optimal locations are needed to be identified. This paper presents the optimal selection of PMU set from the available sets of PMUs. Firstly, it obtains all possible sets of PMUs required for the complete observability of the power system. Then, it defines four criteria such as System Observability Index (SOI), Restorable

Optimal Shunt Capacitor and Distributed Generator in Radial Distribution System Using Particle Swarm Optimization

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Abstract: This paper provides a novel technique in order to allocate the shunt capacitor(SC) banks and distributed generators(DG) optimally in radial distribution system(RDS) to decrease power losses, improve voltage profile, increase the voltage stability index, and acquire great energy savings. To find the optimal size and site of DG and SC banks, Particle swarm optimization (PSO) technique is modified with constriction factor and is applied to IEEE 33-bus system. The result shows the efficiency of the proposed method.

Keywords: Constriction factor particle swarm optimization, Distributed Generation, Radial distribution system, Shunt Capacitors bank, Voltage Profile, Voltage stability index.

I. Introduction

The sizing and siting of distributed generations(DG) units in distribution network is very crucial because optimally and strategically placed DG reduces system losses. Distributed generations may be positioned directly to shrink both real power(Ploss) and reactive power loss (QT), improve the voltage stability index(VSI), diminish the total voltage deviation (TVVD) and revamp the consistency of the network. For optimal sizing and siting of DG in distribution systems different methods are proposed in the literature. PSO is a robust stochastic optimization technique which is based on movement and intelligence of swarm. A significant amount of power loss in the system is presented, in order to that of 10-13% of the output is also generated. High distribution loss implies system voltage inefficiency and poor control occurs. Locally mounted distributed generations and bypass shunt capacitor (SC) banks added to the network can increase network capacity and power quality. Small production units ranging from 1KW to 50MW are connected near the user side in DG technology[1]. Distributed generation can be conventional and non-conventional energy sources[2]. Due to the restriction of fossil fuels, non-conventional distributed generation has become a major option. To use the advantages of the distributed generation technology it is necessary to know the optimal site and size of the distributed generations in distribution system otherwise it may cause some unfavorable effects, such as increase in losses, low voltage profile and increase costs. The implementation of the distributed generation into the

distributed systems is a great choice, as it provides more accuracy, reliability, better power quality and green house gas emission reduction[3]. Since the last decade, researchers have shown interest in finding the proper size and site of shunt capacitors and distributed generator in the radial distribution distribution system. A thorough review of number of state of art literatures which have been focused on best choice of size and site of DGs and SC banks radial distribution system is presented in Table1 for reference.

Table1: Upper and lower limits of DGs and SC bank

CASES	DG _{MIN}	DG _{MAX}	SC _{MIN}	SC _{MAX}
I	0.5	1.5	0.2	1.5
II	0.5	1.5	0.2	1.5

The PSO algorithm for particle swarm optimization often agonizes over the issue of premature convergence. The constriction factor was introduced into the PSO algorithm by Clerc[6] and called as the PSO constriction factor to circumvent this problem. In relation to the rapid change of position, this aspect regulates the speed of the particles. Thus, steady and stable convergence is acquired. The Cf-PSO algorithm is used for transmission system problems, congestion management and economic load dispatch, and the results obtained shows advantage over the other algorithms [4,14-5]. From the survey it is clear that Cf-PSO algorithm has not been employed so far for allocation of shunt capacitor banks and distributed generator in radial distribution system. In view of this main contributions are,

- To achieve the optimal size and site of distributed generation and shunt capacitor banks, to include the credibility of the constriction factor-PSO algorithm.
- To analyze the impact of the allocation of distributed generation and shunt capacitor banks to justify the efficiency of the adopted IEEE 33-bus system with regard to Ploss, Qloss, TVVD and VSI.
- To scrutinize the effect on operational cost and net savings.

AI based Cyber-attack Resistant Microgrid System with IRNSS Synchronization

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Abstract: smart grid is next-generation power infrastructure that is being used to remodel the traditional grid in order to increase its security and performance. Unfortunately, malicious cyber-attacks on the smart grid will cause serious economic, social, technological, and control issues in power system operations. This proposal examines the cyber-security of micro grid systems and makes recommendations. To combat cyber-attacks, new cyber resilient control strategies are being created. A new AI-based approach for detecting cyber-attacks in micro grids and identifying the distributed energy resource (DER) device that was attacked is demonstrated. The approach is time series based analysis and neural network called nonlinear auto-regressive exogenous (NARX) model. To calculate the DC voltage output, use the formula below. We need to train NARX neural networks to understand distributed energy resources and currents.

A prototype will be built to verify the experimental findings presented during the grid connected and isolated modes. The DGs are synchronized using an IRNSS-based scheme. The use of a GPS-based synchronization system to create a standard time reference for synchronizing distributed generation modules is demonstrated. For optimum output and consumption, Deep Learning Optimization Technique is used.

Keywords: DC micro grid, DERs, cyber-attacks, cyber-security, power flow control strategy.

I. Introduction

In order for the country to develop, the electric sector must play significant role in various sectors such as healthcare, industry, irrigation, and communication. Continuous power is an essential component of any nation's growth. Recent cyber-attacks have pushed energy sector resilience in the forefront of national research priorities. The report

published by a private cyber security firm in United States, months after the Galwan valley clash in June, in which soldiers from both countries were killed, has indicated that Chinese cyber operation targeted India's power grid. The firm's report raises questions about whether, outage of power in Mumbai last year is caused by a Chinese party.

In 2005, the EU proposed smart power networks based on business demands and environmental protection [1]. Our society is so dependent of electric power. During blackouts areas no emergency stand by generation, communication systems failed to operate [2]. India was in the third place at electricity producing across the world and even though it is facing power deficiency in the upcoming years power demand increases with the economy as there is a very strong relation between them [3]. A design topology and the technical specifications are discussed below of PV power plant [4]. To handle with the requirement of peak watt of zone all the time inverter should be large enough. Inverter size must be 25–30% larger than total wattage of machines and load appliances [5].

II. Synchronization Technique with IRNSS

IRNSS receiver has the ability of tracking and obtaining of L5, S and GPS L1 signals. Under an MoU, an IRNSS receiver is installed at Navigation and Communication Research Centre (NCRC) laboratory of CBIT Hyderabad in the dept. Of ECE. The IRNSS User Receiver (IRNSS UR) obtains, changes and demodulates obtained satellite signals combined at L5 (1176.45MHz) and S1 (2492.028MHz) band frequencies. The receiver is also capable of processing GPS (L1 C/A) signals centered at 1575.42MHz and generates the computations with reference to the internal or external trigger. The receiver position can be computed using any of the seven modes i) IRNSS L5 only ii) IRNSS S1 only iii) GPS L1 only iv) IRNSS L5 and S1 dual frequency only v) Combined IRNSS

Power Quality Conditioning By UPQC Using DQ Theory

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Abstract: the people are utilizing power for many works to be finished in a day and the electricity has become a major part in our daily life due to this there is a rapid increase in power demand. This lead to the problem of supplying quality power to the purchasers. As a solution to this problem here we proposed a unified power quality conditioner (UPQC) to satisfy consumers by providing them harmonic free and quality in the power supply. The UPQC is combining series and shunt active filter. This is generally placed near to the source and before the load. It solves all the power quality problems that are related to current and voltage, and provides the consumers a harmonics-free power supply. Here we need sensed source voltage and current, load voltage and current which can be obtained by sensing them through sensors. To obtain the reference signals synchronous reference frame dq theory (DQ theory) is used. Compensating voltage to be injected in line is obtained from the reference signals and the sensed signals. The nonlinear loads that are connected at the consumer side injects voltage swell, voltage sag, flicker, voltage imbalances into the line which does not allow for providing quality power supply. Here we proposed solution for the problem of voltage swell and sag by using UPQC with DQ theory.

Keywords: unified power quality conditioner, voltage sag and harmonics, active filters, power quality.

I. Introduction

Unified power quality conditioner (UPQC) was proposed to increase the power system working and had went through various modifications to increase the performance[1]. generally, UPQC had been implemented successfully for mitigating or to compress the many power quality (PQ) problems like voltage sag/swell, flicker, harmonics, fluctuations, unbalanced voltages, poor power factor and currents, load current harmonics, neutral and reactive current[2-3]. The Research on the UPQC has improved tremendously over last decade in the areas like type of converter in UPQC (CSC or VSC), the supply system (single-phase and three-phase), and the configuration of the UPQC topologies [4-5]. All the above power quality issues cannot be solved in one topology configuration, but based each issue priority, they can be dealt accordingly.

The APFs (active power filters), like series APF, shunt APF and hybrid APFs are widely used to mitigate the power quality related problems .The decreasing quality of the power is mainly due to voltage and current harmonics mainly because of wide spread of application the power electronics converters static negative and zero sequence components obtained by utilizing the single phase and unbalanced loads. Therefore, it's very important to maintain high standard of power quality [6].

The unified power quality conditioner (UPQC), also known as hybrid filter, is the most precise hybrid filter design. UPQC is a multi-role power conditioner which is shunt and series active filter combination that is connected in cascade through DC link capacitor that is utilized to eliminate many disturbances in power supply, to clear fluctuations in voltage, and to check load current harmonics entering into the power system[7],[8].

This is the traditional and widely acceptable power device utilized to suppress the disturbances that affect the bbehavior of critical and sensitive loads. The UPQC has series and shunt compensation abilities for reactive power, harmonics, and power-flow control and voltage disturbances. The UPQC consists of the two voltage-source converters connected through DC link designed in three-phase three-wire, single phase or three-phase four-wire topologies.

One of the converters is combined through a transformer in series between nonlinear load and source at PCC and functions as voltage-source inverter. One more inverter is connected through a transformer in shunt at PCC and operates as current-source inverter. Series active inverter performs harmonic isolation, compensates the voltage supply disturbances and eliminates harmonic oscillations. Shunt active inverter eliminates the reactive power,load current distortions and performs the DC link voltage regulation.

The series converter of UPQC acts as the voltage source controller that it performs as the series APF, whereas the PWM shunt converter acts like the current source controller that it performs as the shunt APF. The Power supply is been not connected at the common DC link. It just contains only the small DC capacitor the Energy storage element.

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Investigation on Routing Methods in Low power VLSI Scenario

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The ever-increasing demand in new applications and compact devices resulted in developing new technologies in the integration level. Very large scale integration (VLSI) has given the advantage of integrating large density applications into a compact platform achieving the objective of obtaining high-end applications onto a single platform. With the increase in developing the integration density, this technology has evolved to Nanoscale designing, which gives a significant leap into the VLSI domain. With the achievement of large integration density, the constraints of power, speed and throughput are also increasing. As the transistor density increase, the power consumption too increases. This is a bottleneck for VLSI design for critical applications. Hence the need for lower power consumption is a major objective in the VLSI design environment. Power optimization is developed via multiple means, where researchers have an outcome with various approaches in composition level or integration level to reduce power dissipation. The processing power utilization is considered a useful consumption, however, power losses due to IR losses and electromagnetic interference (EMI) are investigated.

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Integration of Artificial Intelligence and the Internet of Things with Blockchain Technology

K. Saritha, Muralidhar Kurmi , K. Madhavi & D. Nagadevi


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Abstract

Artificial intelligence (AI), blockchain, and the Internet of Things (IoT) give a unique opportunity to the public sector and enterprises. All institutions that leverage these innovations develop advanced goods and services for new customer generation by associating streamline and improving modern processes and building entirely new business models. The internet, mobile devices, and personal computing put a supercomputer in our hands. We have been exposed to distracting technology earlier and recognized that it changes the world as we know it. However, several of these examples from past times appeared in isolation steadily and objectively. Before the origination of the internet, we used personal computing, and the game changed again. We were internet-savvy lay before smartphones put the internet in our pocket.

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Neeraja Bandi ; Rajkumar Ramavath ; Sathish Kumar Meda [All Authors](#)

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Abstract

Document Sections

I. Introduction

II. Implementation of Ptl Based Basic Gates In 180 Nm

III. Implementation of 8T Full Adder In 45 Nm Using 3T Xor Gate

IV. Performance Analysis of the Pposed Fa Circuit

V. Conclusion

Authors

Abstract:

The advancement of portable electronic devices leads to the requirement of digital circuits which are fast, small in size and consume minimal power. High speed addition has always been a primary requirement for high-performance processors. Conventionally, CMOS logic is used to design adder topologies but as the transistor count decreases the threshold loss problems seem to creep in. To eliminate this problem, optimized values of aspect ratios (W/L) with body bias voltage are chosen and a suitable combination is selected to design 2T AND, 2T OR and 3T XOR cells based on the Pass Transistor Logic (PTL). The modified area efficient PTL structures give better performance in terms of speed with a reasonable threshold loss. The design is carried out in Cadence Virtuoso tool for 180nm. Further, 3T XOR and 8T FA and circuits have been designed and analyzed in 45nm technology. PTL based designs in 45nm with proper body bias voltage are showing improved results in terms of power, speed, area and giving strong 1(0.994V) and strong 0(0V) values with reduction in threshold loss. Finally, a comparative study is also made with the fast adder circuits already available in the literature.

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Statistical Characterization of IRNSS Satellite Clock Error for Receiver Autonomous Integrity

[D. Sony](#) , [D. Krishna Reddy](#) & [P. Naveen Kumar](#)


Conference paper | [First Online: 21 May 2021](#)

489 Accesses

Part of the [Advances in Intelligent Systems and Computing](#) book series (AISC, volume 1325)

Abstract

IRNSS is a satellite system developed by ISRO to provide accurate timing information to the users. Some of the IRNSS applications include terrestrial navigation, aviation sector, disaster management, etc. Receiver autonomous integrity is technology developed to measure out the integrity of GNSS signals in a receiver system. Civil aviation is one among the widely dependent sectors on IRNSS satellites. Safety critical applications mostly depend on the parameters integrity and accuracy. Integrity mainly relies on signal-in-space errors (SIS Error). SIS errors mainly constitute broadcast ephemeris, orbital errors, and satellite clock error. The integrity predominately depends on the investigation of satellite clock error and becomes a key factor for advanced receiver autonomous integrity monitoring (ARAIM). This paper reports on statistical characterization of clock error for various IRNSS satellites. This paper

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T. Sridher ; A.D. Sarma ; P.Naveen Kumar ; K. Lakshmana [All Authors](#)

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Abstract	Abstract:
Document Sections	Accurate pathloss prediction is essential for Received Signal Strength (RSS) based indoor localization applications. In this paper, experiments are performed using commercially available off-the-shelf hardware modules in indoor environment to identify the suitable pathloss model. Three prominent models are applied to the experimental propagation data and the results are compared. It is observed from the coefficient of determination (R^2), linear regression followed by lognormal model are doing better compared to ITUR model. For the selected indoor environment, the performance of lognormal is better as compared to the other models.
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2 Theoretical Background	
3 Experimental Setup	
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1
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Abstract

Document Sections

- I. Introduction
- II. Theoretical Background
- III. Methodology
- IV. Results and Discussion
- V. Conclusion

Authors

Figures

References

Citations

Abstract:

Intentional interference such as spoofing is an emerging threat to GPS receivers used in both civilian and defense applications. With the majority of smartphones relying on GPS for positioning and navigation, the vulnerability of these phones to spoofing attacks is an issue of security concern. In this paper, it is demonstrated that is easy to successfully spoof a smartphone using a simplistic spoofing technique. A spoofing signal is generated using open-source signal simulator and transmitted using a low-cost SDR. In view of the tremendously increasing usage of GPS enabled smartphones, it is necessary to develop suitable countermeasures for spoofing. This work carries significance as it would help in understanding the effects of spoofing at various levels of signal processing in the receiver and develop advanced spoofing detection and mitigation techniques.

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An Insight into the Women Academicians' Problems in the COVID-19 Pandemic

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Abstract: COVID-19 experience is changing the way research is conducted, particularly in some sectors: the new processes of rapid peer review, the increased quantity and pace of available data, and the distribution of funding across sectors are changing the equilibria of the academic environment, and we will need to pay attention to the impact this has on inequalities. This paper describes the experiences of the women academicians in the course of the COVID-19 pandemic and the general view of women's actual situation. It also presents the past and present scenario of women in research and steps to be implemented to expertise.

Keywords: Women academicians, COVID-19, Research, Funding, Scenario.

1. Introduction

Women make up 70 % of the world's health staff and more than 50% of medical graduates in many countries. Despite this, the medical leadership of women and gender minorities remains underrepresented. Women are just 22% of full professors in American medical schools [1] and 23% in Europe [2]. In particular, women of color are under-represented; Black women are just 0.5 percent of full professors in American medical schools [1]. Career progression includes scholarly publishing. The first authorship of women in major medical journals rose from 27% to 37% (1994–2014) [3]. However, COVID-19 challenges change by rising current gender inequalities.

2. Analysis

Early data indicate that COVID-19 has an important effect on the publication of women. Andersen and colleagues [4] compared authorship of the 1179 medical COVID-19 papers with 37,531 papers from the same journals in 2019. At 30%, 28%, and 22%, women's total, first, and last authorship share in COVID-19 documents decreased respectively by 16%, 23%, and 16%. Frederickson [5] found in a GitHub review of ArXiv and bioRxiv submissions that, while pre-print submissions overall increase, the number of male writers is growing faster than the number of females [6]. The study of the COVID 19 articles in the Lancet (n=159) [7], excluding editorials, World Studies, and Perspectives, reveals that, in the first, final, and corresponding women's authorship, the total number of writers was 30.8%, 24.4%, 25.8%, and 22.9%, respectively. Moreover, the majority (61.3%) of authorships have been associated with high-income countries in Europe and Central Asia (40% · 2%). Figure 1 shows the distribution of authorship by gender.

Overall female authorship of COVID-19 research papers (32.9 percent) is close to previously reported authorship (29 percent, 2016–17), but overall female authorship of COVID-19 comments (30.6 percent) is lower than previously reported (39 percent, 2018) [9].

Comprehensive Study on Content Based Medical Image Retrieval

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Abstract: Content-Based Image Retrieval (CBIR) is the technique applied for the retrieval of query related images from a large database with different kinds of images. Databases are available in different patterns such as text, image, audio, video, etc. Retrieval of a query image from a huge volume of database is a common issue because it uses the visual information of image such as shape, text, and color for representation of an image. For an effective CBIR system, there is a need to develop different kinds of retrieval methods using feature extraction, similarity matching, etc. Text-Based Image Retrieval systems are used in many applications, but for large databases these are incapable. To solve this, CBMIR systems are proposed to retrieve matching images from the database using an automated feature extraction method. At present, the medical imaging field finds extensive growth in the generation and evaluation of various types of medical images. Various methods are used for different kinds of medical images. CBMIR approaches should be selected according to the modality which uses query image as input and it retrieves the images, which are similar to the query more efficiently and effectively. This paper provides a comprehensive study of the CBIR system and major applications in the medical domain.

Keywords: CBIR (Content Based Image Retrieval), CBMIR (Content Based Medical Image Retrieval), Semantic gap, Features Extraction, Dimensionality Reduction, Performance measures, Datasets.

1. INTRODUCTION

The semantic gap is a gap between high level human perception and low level machines description which limits the retrieval efficiency. Systems like Query by image content (QBIC) [1], VisualSeek [2], SIMPLiCity [3], and Blobworld [4] use low-level features like shape, texture, and color to represent its semantics. Other systems like Webseek [5] and Image Rover [6] have applied the image search based on submitted query key-words, and then performed user classification by providing category browsing and search-by-example facilities. After the success of these systems, research directions towards different disciplines such as machine learning, computer vision, Pattern recognition and artificial intelligence.

This study aims at addressing the main issues in CBMIR system are,

- To reduce the semantic gap should the features used to represent the image contents should be single or combined.
- The capability of new proposed methods in reducing the 'curse of dimensionality' problem when compared with traditional methods.
- The ability of CBIR systems to effectively exploit the expected breakthrough by using deep neural networks for learning CBIR tasks.
- How much the achieved advancements can be modeled and propagated to boost real-time retrieval applications; especially over the web?
- The exigent need for robust measures to evaluate the performance of image retrieval systems in terms of accuracy, computation complexity, memory usage, and rank among other systems in the CBIR scope.

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Abstract

Hackers are usually prepared to hack confidential documents for their vested interests. The most difficult task is to establish a secure link between the secret message and image quality. The proposed scheme combines cryptography and image steganography techniques to avoid illegal attacks by an unknown person. This scheme will enable image security and message security. The International Data Encryption Algorithm (IDEA) cryptographic algorithms and Discrete Cosine Transform (DCT) based steganography algorithms based functional approach. The purpose of cryptography is to encrypt and decrypt the document. Steganography is the technique of hiding documents within an image with increasing payload for the secure transmission of confidential data over the internet. In this paper, we present a single application to hide the information by the sender, which is an essential document and secret file. The form will be invisible to an unauthorized person. PSNR of 90.06 dB with a payload of 52,400 bytes of information in an image.

Keywords: Data hiding; cryptography; steganography; image processing; DCT; IDEA

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Department of Mathematics, University of Turin, Italy.

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<https://stm.bookpi.org/CTMCS-V1/issue/view/135> Performance Analysis of Algorithms for NavIC Signal Acquisition N. Alivelu Manga

Current Topics on Mathematics and Computer Science Vol. 1, 26 May 2021, Page 17-27

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Abstract

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Abstract

Indian Space Research Organization (ISRO) developed and designed the Indian Regional Navigation Satellite System (IRNSS), an indigenous navigation system. It is named as NavIC, Navigation with Indian Constellation by Indian Prime Minister. NavIC is a seven-satellite constellation that will offer India with accurate positioning, navigation, and timing services. The focal modules of NavIC receiver are acquisition, tracking and navigation unit. The data processing unit for recognising satellite signals and their related code phase and carrier frequency is called acquisition. Various acquisition strategies, such as Serial search and Parallel Code Phase search algorithms, are explored and contrasted with Cooley-Tukey FFT and sub-sampled Fast Fourier transform techniques in this chapter (ssFFT). The acquisition computation time for a ssFFT based NavIC receiver is faster than parallel FFT acquisition, and the Cooley-Tukey FFT IRNSS acquisition algorithm is faster and offers better code phase and carrier frequency values than the serial search acquisition approach, according to the results obtained in MATLAB. Reduction in the acquisition time and computation complexity is observed by the exploitation of properties of sparse FFT, Fourier transform and decimator and by the use of sub sampled FFT.

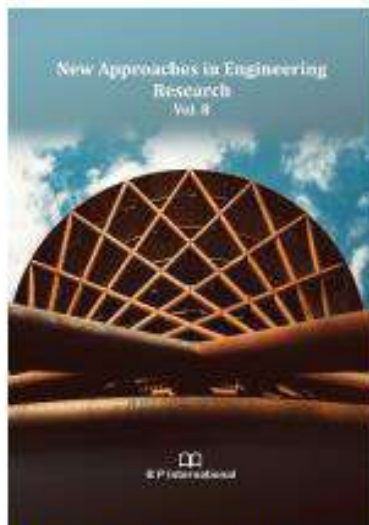
Keywords: IRNSS; NavIC; acquisition; parallel code phase search algorithm; serial search acquisition algorithm; ssFFT; Cooley-Tukey FFT

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The Design of a Static CMOS 16 Bit High Speed and Low Power Consumption Hybrid Adder Circuit Using Brent Kung Adder: A Recent Study

M. Ramana Reddy

New Approaches in Engineering Research Vol. 8, 10 July 2021, Page 101-122

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Abstract

In this research, a static sixteen Bit CMOS Brent kung adder structure was invented, which boasted a higher speed and reduced power consumption when compared to ripple deliver adders. The speed was improved by altering the shape and adding a Brent Kung adder, which uses (28 transistor, Boolean precise judgement) and is a lot faster than a ripple supply adder. These speed adders will help DSP processors grow. With the use of a 180nm Cadence device, time delays and power consumption are significantly reduced with unique adders.

Keywords: Brent Kung adder; full adders; CADENCE; time delay; power consumptions

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Methodologies and Applications of Computational Statistics for Machine Intelligence

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Abstract

Artificial intelligence (AI) refers to science-generating devices with functions like reasoning, thinking, learning, and planning. A robot is an intelligent artificial machine capable of sensing and interacting with its environment utilizing integrated sensors or computer vision. In the present day, AI has become a more familiar presence in robotic resolutions, introducing flexibility and learning capabilities. A robot with AI provides new opportunities for industries to produce work safer, save valuable time, and increase productivity. Economic impact assessment and awareness of the social, legal, and ethical problems of robotics and AI are essential to optimize the advantages of these innovations while minimizing adverse effects. The impact of AI and robots affects healthcare, manufacturing, transport, and jobs in logistics, security, retail, agri-food, and construction. The chapter outlines the vision of AI, robot's timeline, highlighting robot's limitations, hence embedding AI to robotic real-world applications to get an optimized solution.

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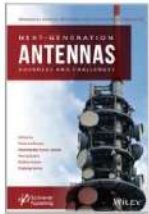
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Introduction

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Next-Generation Antennas: Advances and Challenges

Prashant Ranjan (Editor), Dharmendra Kumar Jhariya (Editor), Manoj Gupta (Editor), Krishna Kumar (Editor), Pradeep Kumar (Editor)
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Reconfigurable Antennas

Dr. K Suman

Department of ECE, CBIT, Hyderabad, Telangana

Abstract

In the technologies, the Radio Frequency front end should be conceptual in a natural scenario; reconfigurable antennas have become crucial for the coming generation of wireless communication and systems that are sensible because of their ability to change the radiation characteristics dynamically. They have many advantages such as good isolation, out of band rejection, multifunctional capabilities, low volume, low front end processing efforts without the need for filtering element which made them useful in wireless communications applications such as fourth-generation (4G) and fifth-generation (5G) mobile terminals. Reconfigurable antennas threw a novel challenge to antenna designers and researchers as they can be tuned to any frequency of operation without changing the radiation pattern. For the past thirty years, a lot of improvement was done in the advancement of reconfigurable antennas. This chapter emphasizes the advancements of reconfigurable antennas with basic concepts and gives a few guidelines for future research.

Keywords: Reconfigurable antennas, frequency reconfigurable antennas, polarization reconfigurable antennas, pattern reconfigurable antennas, leaky wave antennas, phase shifters, arrays

12.1 Introduction

Wireless communication systems are moving towards multiple functions of wireless services for different applications. These are used at different times and for different purposes like defense, naval, or domestic purposes. The congestion of the electromagnetic spectrum became one of the reasons for enhancement. To take up this challenge, the upcoming wireless

Email: suman_me192@cbit.ac.in

Prashant Ranjan, Dharmendra Kumar Jhariya, Manoj Gupta, Krishna Kumar, and Pradeep Kumar (eds.)
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Study of IRNSS Receiver Doppler Positioning in Kinematic Conditions

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About The Author / Editor

Dr. P. Elangovan

Associate Professor & HOD, Department of Electrical and Electronics Engineering,
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Design of Vedic Mathematics based 16 bit MAC unit for Power and Delay Optimization

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Abstract—Multiply and Accumulate unit is the essential component of any Digital signal processor. In designing such a unit, it is significant to consider various design parameters such as power, area, and delay for a given application. Also, an efficient multiplier and adder units play a vital role in deciding the performance of MAC unit and hence DSP. In this paper, the design of 16 bit MAC unit using 16 bit Vedic multiplier and a 32 bit spanning tree adder is presented. The Vedic multiplier, in turn, is designed utilizing carry save and spanning tree adders by applying the concept of Urdhva Tiryakbhyam sutra. This entire design is coded in Verilog HDL using the tool Xilinx Vivado 2018.3 simulator with a targeting ZedBoard (xc7z020-3elg484) for synthesis and implementation. This proposed multiplier design is compared with design of the existing 16 bit Vedic multiplier which is made up of Carry Save Adders. The results showed that there is an improvement in delay and power by 30% and 21.1% respectively compared with the existing design.

Keywords—Vedic mathematics, high speed, spanning tree adder, MAC unit.

I. INTRODUCTION

The fundamental block used in various complex signal processing applications is Multiply and Accumulate (MAC) unit. In the computational applications such as Discrete Fourier Transformation (DFT), Fast Fourier Transformation (FFT), Filtering, Convolution, Finite Impulse Response filters, etc. this unit plays a critical role in improving the efficiency and performance which makes the Digital Signal Processor (DSP) highly dependent on the MAC unit. As multiplier and adder are main parts of a MAC unit, they must be chosen wisely in order to achieve optimization both in power and delay.

Vedic mathematics is a practice retrieved from ancient Vedas of Hindu scriptures. According to Indian Monk Sri Bharati Krishna Tirthaji's research published in 1965, there are 16 Vedic mathematics sutras. These techniques reduce the complexity by cutting out excess steps while performing the operations. Hence, Vedic mathematics is one of the most efficient and refined mathematical systems. Among 16 sutras, Urdhva Tiryakbhyam (UT) sutra is widely used because of its faster calculative multiplication abilities. The Sanskrit word Urdhva Tiryakbhyam meaning vertically and crosswise and is preferred for smaller order numbers. This process of vertical and crosswise multiplication makes it easier to generate the partial product outputs. The traditional multiplication

procedures generate outcomes consuming certain delay which is not suitable for current trends. To reduce the delay and improve effectiveness of the signal processing calculations, Vedic mathematics based multiplication is preferred.

The UT sutra is used in this design as it supports pipelined computing with lesser delay by making it a faster multiplier. In order to achieve low delay functioning, Spanning tree adder is used which is a modified version of the Carry look ahead adder [1]. For the addition of more than two partial products at a time with less power and less delay, Carry Save Adder (CSA) is used.

In this paper, 16 bit MAC unit built using Vedic multiplier is designed which uses CSA and spanning tree adder along with lower order multipliers. This design is then compared with an existing system that uses the same multiplier logic but comprising CSAs. The paper consists of related works described in Section II, further in Section III, the design of MAC unit is elaborated. Results are discussed in Section IV and conclusion is made in Section V.

II. RELATED WORKS

Various researchers used CSAs and carry select adders in the design of Vedic multiplier for MAC unit and disclosed development in either delay, power or area [2], [3], [4], [5]. The Vedic multiplier (UT sutra) comprising Kogge - stone adder is realized [6]. The system showed improvements in terms of speed as the adder generated a carry signal in $O(\log N)$ time. Nikhilam Sutra is analyzed in terms of total calculation time and multiplication for inputs of different bit lengths [7]. The design of a Vedic multiplier, which exploited 4:2 compressors instead of standard full adders showed improvements in performance [8]. The MAC unit is built using modified Booth's algorithm and when related with the conservative algorithm resulted improvements in power and delay [9]. A 64 bit Vedic multiplier utilizing UT sutra and Han Carlson adder is related with conventional Booth and Array multiplier [10]. Pipelining technique is employed on Vedic multiplier (UT sutra) which resulted in usage of less power compared to non pipelined architectures [11]. A 32 bit multiplier is designed using booth and pipelined Wallace tree architectures along with the usage of carry select adder to reduce the delay [12]. The design of Wallace tree multiplier using 4:2 compressors and parallel prefix adders to reduce the number of stages to get the output for higher order multiplication is presented in [13]. From the research done,

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Greek Handwritten Character Recognition Using Inception V3

V. V. Satyanarayana Tallapragada, N. Alivelu Manga, M. V. Nagabhushanam & M. Venkatanarash

Conference paper | [First Online: 04 September 2021](#)

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Abstract

Handwritten Greek character recognition is considered as one of the ways for genuine character recognition. In this paper, convolutional neural networks (CNNs) is applied on disconnected transcribed Greek character to identify and recognize properly. Inception V3 CNN model, with unique settings of the quantity of neurons in each layer is utilized and the interfacing route between certain layers. Yields of the CNN are set with modified adjusting codes, wherein CNN has the capacity to discard recognition along these lines. For preparing of the CNN, a mistake tests-based fortification learning methodology is created. Results show that the proposed system tend to achieve an accuracy of 99% and is far better when compared to the existing techniques.

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Design and Development of NavIC and GPS based Geolocation System for CO₂ Monitoring

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Abstract—With the development and implementation of NavIC, India has joined the league of very few countries having its own satellite navigation system. NavIC when used together with GPS, provides improved positioning accuracy. Therefore, the design and development of indigenous NavIC+GPS based geolocation systems for mobiles, automotive, IoT services, tracking and monitoring systems, etc. have been gaining significance. In this paper, a NavIC+GPS based geolocation system for CO₂ level monitoring is designed using a low-cost NavIC + GAGAN/ GPS receiver module, Microcontrollers, and a CO₂ Sensor. This system measures the CO₂ level with respect to NavIC + GPS-based location and time. The proposed system is economical and is a step towards the adoption of NavIC in monitoring systems. Also, such systems carry significance in view of the increasing air pollution in major Indian cities. Further, this system can be extended to monitor major air pollutants such as PM₁₀, PM_{2.5}, dust etc.

Keywords—NavIC, GPS, MQ-135 Sensor, LCD Display, PVT.

I. INTRODUCTION

The Indian Regional Navigation Satellite System (IRNSS), with an operational name of Navigation with Indian Constellation (NavIC), provides the users with continuous positioning and accurate timing information, within India and also extends to around 1500 Km from its boundary [1]. Earlier Global Positioning System (GPS) was widely used for positioning and time synchronization applications but now NavIC based and NavIC+GPS based applications are being developed to serve in various sectors like agriculture, aviation, marine, surveying, mapping, military and telecommunication etc. ISRO has given consultation to Qualcomm, for enabling NavIC in their Snapdragon mobile chipsets. These chipsets are being released by Qualcomm Technologies, Inc [2]. Hence miniaturization of NavIC chips is eventually making NavIC as a standard feature in the upcoming handsets, applications, processors, etc. Tracking and monitoring are widely used applications of satellite navigation. The availability of low-cost NavIC + GAGAN/ GPS chipsets such as the ones from Skytraq, will now

facilitate design and development of low-cost tracking and monitoring systems. In this paper, the details of the design and development of a NavIC+GPS based geolocation system for CO₂ level monitoring system are presented.

The design carries significance as CO₂ is one of the important air pollutants to be monitored and air pollution is a major cause of death and disease globally. High concentrations of CO₂ in the environment contributes to 20 percent of Greenhouse effect [3]. Hence monitoring of CO₂ level in the environment with respect to time and location is must and preventive measures must be taken as required. Several GPS based pollution monitoring systems are available, but a specific NavIC+GPS based system is not yet reported [4, 5]. Moreover, NavIC+GPS position accuracy is better than that offered by standalone GPS or NavIC [6].

II. TECHNICAL APPROACH

The design of a NavIC+GPS based CO₂ level monitoring system consists of three subsystems, the receiver subsystem, the sensor subsystem and the microcontrollers subsystem (Fig. 1). The receiver subsystem is designed using a NavIC+GPS receiver chip (S2525F8-G12), a Patch antenna (ST254-1A003) and a Max232 IC for communication between NavIC+GPS receiver module and microcontroller/Laptop. All the components are mounted on a PCB, with receiver chip and patch antenna mounted on opposite side to reduce possibility of interference. The IRNSS and GPS signals received by the antenna are processed to obtain Position, Velocity and Time (PVT) information from the receiver chip and are transferred to microcontroller subsystem via Universal Asynchronous Receiver/Transmitter (UART) using Max232 interface.

The design of sensor subsystem consists of a PCB with CO₂ sensor (MQ-135) and signal conditioning circuitry for proper filtering and linearization of sensor output. The CO₂ level detected by the sensor is sent to microcontroller subsystem after proper signal conditioning. Further, the microcontroller

"Significance of Internet of Things (IoT) in Health Care with trending smart Application"



Significance of Internet of Things (IoT) in Health Care with Trending Smart Application

V. V. Satyanarayana Tallapragada, I. Kullayamma, G. V. Pradeep Kumar & M. Venkatanarash

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Abstract

Advancement in the healthcare industry is growing quickly and is quite difficult to identify the breakout that may be the next game changer. The innovations and technological advancements in the Internet of things (IoT) will shape the future of the healthcare industry. This also enables a centralized network of interconnected devices to be created that can produce and share information within a single system. The main features and highlights of IoT-enabled healthcare industry are reduced errors, decreased costs, better patient experience, improved disease management, and home care. This paper presents the current trends in IoT-enabled smart healthcare applications such as remote patient monitoring systems, smart

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‘A Simple Model for Forecasting Confirmed COVID-19 Cases in a Given System’

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Abstract:

With rapid development in technology, electronic waste (e-waste) or Waste Electronic and Electrical Equipment (WEEE) is an arising threat, posing serious contamination problems to mankind and the environment. The fundamental reason behind uncontrolled electronic waste around the world is the fast advancement of innovation and low production cost. Due to this, very large amounts of e-waste have to be discarded every year whose disposal is a major concern. To tackle this problem of e-waste, e-waste management methods like reducing and recycling play a vital role. These techniques also help in the establishment of a circular economy. **This paper summarizes the statistics of e-waste generated worldwide, along with focusing on the benefits of recycling. It highlights the impact e-waste has on the environment and mankind and how green electronics could be one of the viable remedies to this.**

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Analysis of Doppler Collision Prediction using Supervised Machine Learning

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K. Tarun ; N. Vinay Reddy ; T. Akhlesh ; P. Sathish [All Authors](#)

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- I. Introduction
- II. Doppler Collision
- III. Implementation of Supervised ML Algorithms
- IV. Results & Discussion
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Abstract:

Navigation with Indian constellation (NavIC) has been developed by Indian Space Research Organization (ISRO). NavIC satellite constellation contains four geosynchronous satellites and three geostationary satellites. There are many factors which affect the navigation system. Doppler Collision is one such factor which leads to tracking errors due geostationary satellites. It occurs between geostationary satellite combination IRNSS 1C-1G, 1C-1F, 1F-1G. When the relative Doppler frequency of satellites is less than the code tracking loop bandwidth Doppler Collision (DC) period is observed. The positional accuracy of NavIC system is affected by DC. Due to DC, the more effected geostationary satellite pair is 1C-1G. To mitigate the DC, the prediction of DC using machine learning algorithms will be very much useful for improving positional accuracy. The parameters considered for prediction are relative Doppler, satellite position, satellite velocity, duration of occurrence and relative Doppler. Three supervised machine learning algorithms such as Linear regression, Random Forest regressor and K-Nearest Neighbors (KNN) regressor are used for prediction. Among these three algorithms, random forest regressor predicted the Doppler Collision accurately.

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Preliminary Result of COVID-19 Detection through Chest X-Ray using Artificial Intelligence

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Abstract—The outbreak of the novel coronavirus disease, COVID-19, turned into a global pandemic. The standard test for diagnosis is the reverse transcription Polymerase chain reaction (RT-PCR) but it is a time consuming process. Chest X-Ray (CXR) imaging is a promising method which can be employed in the detection of COVID-19. This method is comparatively faster, low cost and available easily. A Residual Network (ResNet)-18 model is being used and trained on a COVID-19 radiography dataset. The designed Artificial Intelligence (AI) enabled framework can predict CXR scans and produce a result with a reasonably high accuracy.

Keywords—Artificial Intelligence, ResNet-18, COVID-19, coronavirus, chest x-ray.

I. INTRODUCTION

In December 2019, a novel coronavirus disease was identified in the capital city of Hubei province i.e., Wuhan, China. This infectious disease is named COVID-19. The symptoms can be characterized as fever, cough, difficulty in breathing, headache [1].

The disease began to spread widely in China and has been identified in other parts of the world by the end of the year. Laboratory tests were conducted on the confirmed cases and found a new type of coronavirus, novel coronavirus (nCoV) and also other respiratory pathogens like adenovirus, influenza, avian influenza, Middle East Respiratory Syndrome (MERS), Severe Acute Respiratory Syndrome (SARS) were the cause of this syndrome [2].

The World Health Organization (WHO) received a detailed information from the National Health Commission on 11 and 12 January 2020. The reason for the outbreak is associated with the exposures in Huanan seafood market in Jiangnan district, Wuhan [3], a major domestic and international transport hub. According to the preliminary epidemiological investigation, most of the COVID-19 confirmed patients worked at or were frequent visitors to this seafood market. So, that it indicates animal to human spread initially. The person-to-person spread was known when people who did not have any direct contact with a live

animal markets were diagnosed with this disease.

The WHO declared it as a pandemic on March 11, 2020 [4] because most people are not immune to its fast person-to-person spread. As of March 11, number of confirmed cases were 115,000 with more than 4000 deaths. As this viral disease continues to spread around the globe, strict measures have been taken by every country to slowdown the spread of corona virus. It began with travel restriction to other countries, quarantine of patients and then lockdown and city shutdown.

This pandemic has been a health crisis from the beginning but because of the lockdown, it became a financial crisis too. All the sectors of economy have been affected as manufacturing and buying has reduced drastically. Daily wage workers and small businesses had the most impact in every country.

The standard clinical confirmation test for COVID-19 is Reverse Transcription Polymerase Chain Reaction (RT-PCR) [5], which is manual, time consuming and complex. In developing and underdeveloped countries, there is a limited availability for testing kits because the financial cost for these laboratory kits is a significant issue and to afford the testing price by most people in those countries is not easy while fighting the disease. Rapid increase of infected patients requests for a screening system where the physicians can quickly identify the patients who need immediate clinical help. A published multinational consensus statement from the Fleischner society recommends to use chest radiography to manage the disease [6],[7].

Chest X-Ray (CXR) is a non-invasive clinical supplement in identification of pulmonary abnormalities. Chest X-Ray imaging is comparatively less cost and easily available for testing. Recent findings found that COVID-19 infected patients have distinct visual characteristics, like multi-focal, bilateral ground glass opacities in non-ICU patients and dense pulmonary consolidations in ICU patients, in the CXR images [8]. These subtle characteristics interpretation is quite challenging and can be done by expert radiologists. But the exponential increase in the confirmed patients makes it difficult for the limited expert radiologists to diagnose in time which leads to increasing mortality rate.

A Prototype Wi-Fi Controlled Car using NodeMCU

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Abstract: In this paper, we developed a remote-controlled car using the latest IoT modules. Low cost IoT modules are popular in terms of availability and re-programmability. This paper focused on hardware and software requirements for developing the remote-controlled car with low-cost modules. The developed prototype embedded car is useful for several research applications like data collection in long corridor or indoor/office smooth surface environments.

Keywords: IoT, NodeMCU ESP8266, Wi-Fi Car

I. INTRODUCTION

In recent years, the applications of developing remote controlled cars are one of the popular toy products in the market [1]. To draw the research results from traditional remote-controlled cars like using single chip microcomputer is not possible. Because of not having storage capabilities and data computation facilities. In order to develop scientific attention, the remote-controlled car could be used for more realistic problems, such as distance measurement, data collection for indoor channel modeling, hospitals ventilation monitoring etc., Internet of Things is the latest emerging internet technology and has got its origin from home automation. The basic difference between standard home automation devices and IoT devices is that the IoT devices can transfer and share data over the existing network framework. Also, IoT devices are capable of being controlled remotely over the internet [2]. In the recent days, applications like developing Wi-Fi based smart car for toxic gas monitoring in large-scale petrochemical plants (Shu et al., 2015), and data collection of various environments plants in industries (Zhiqiang et al., 2015) are coming. In this paper, we used NodeMCU ESP8266 Wi-Fi transceiver for the purpose of distance measuring for data collection applications. Similar kind of prototype module is developed by wang et al., (2014) with Arduino microcontroller using Bluetooth system.

II. PROTOTYPE DESIGN AND DEVELOPMENT

The overall developed work consists of user with a smart phone, NodeMCU ESP 8266, L298N Motor Driver and Dual Shaft DC Motors and wheels. A program is developed in Arduino Integrated Development Environment (IDE) and is installed in Node Microcontroller Unit (Node MCU) to receive the controls from the smart phone. Later on, Node MCU sends corresponding digital signal to the motor driver module (L298N) for smooth functioning of the car in different

directions. The technical specifications of NodeMCU and L298N Motor Driver are presented in Table I and II.

Table I. Specifications of NodeMCU

S. No	Parameter	Value
1.	Input Voltage	3.3V
2.	Digital Input/Output Pins	16
3.	ADC Pin	1
4.	Flash Memory	4MB

The required supply voltage for NodeMCU is 3.3V, giving from externally Lithium-Ion Batteries of 3 no's each one of rating 4V. Therefore, nearly the remote car could be operated up to 2 hours continuously. The pin configuration of NodeMCU is shown in Fig.1[5].



Fig.1. NodeMCU ESP8266 module

Table II. Specifications of L298N Motor Driver

S. No	Parameter	Value
1.	Motor Supply voltage	5V
2.	Motor Supply Current	2A
3.	Maximum Power	25W
4.	Logic Voltage	5V
5.	Logic Current	0.36mA

The L298N is a dual-channel H- Bridge motor driver capable of driving a pair of DC motors. It can control both speed and spinning direction of four tyres of car.



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IoT-Based Smart Farming System Using MQTT Protocol and ML Algorithms

[Sathish P](#) & [Aivelu Manga N](#)

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Abstract

Internet of Things (IoT) enables relations between separate data collection and exchange platforms. The Message Queuing Telemetry Transport (MQTT) protocol is light weighted protocol. The proposed system is designed using an ARM Cortex processor with the other supporting peripherals for monitoring and controlling environmental parameter values to achieve optimal growth and yield of the crop. The system parameters include temperature, humidity, soil moisture, air pressure, and fertilizer content sprayed. Further, the obtained data from the field trials are processed through the ThingSpeak cloud

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Performance analysis of Multiple Antenna Systems with New Capacity Improvement Algorithm for MIMO based 4G/5G Systems

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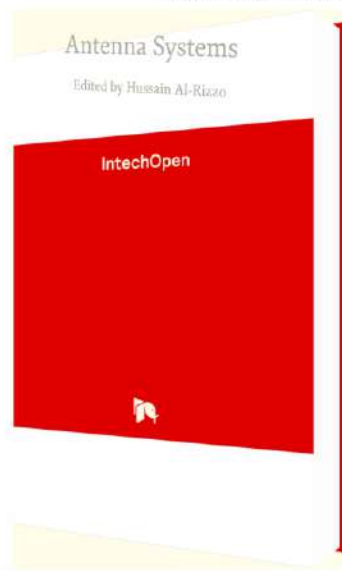
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Chapter

Performance Analysis of Multiple Antenna Systems with New Capacity Improvement Algorithm for MIMO Based 4G/5G Systems

Vinodh Kumar Minchula and Gottapu Sasibhushana Rao

Abstract

For a time varying channel, the channel capacity is determined by the Channel State Information (CSI) or its fading distribution at a transmitter or receiver. If CSI is perfectly known at both the transmitter and receiver, then the transmitter can adapt to its optimal transmission strategy (i.e., optimal antenna selection by power allocation scheme) relative to its instantaneous channel state for capacity enhancement. In the case where the channel information is not available at the transmitter (No CSIT), the transmitted power has to be distributed equally (i.e., uniform power allocation) between the transmitting antennas to improve the channel capacity. The IWFA (Iterative water filling allocation) strategy therefore allocates power to those spatial channels with positive non-zero singular values i.e. good quality channels and discards the lower eigenmodes channels resulting in maximum capacity in MIMO systems for perfect CSIT. In this chapter, the performance analysis of Multi Antenna systems under ICSIT/ICSIR, Perfect CSIT, No CSIT channel conditions have been implemented and a novel adaptive power allocation algorithm (SVD-based IWFAA) is considered to improve the spectral efficiency of next generation wireless MIMO communication (4G–5G). The algorithm considered is more efficient at high noise levels (low SNRs) under Perfect CSIT conditions because the strongest channel eigenmodes are allocated more power.

Keywords: MIMO, SVD, UPA, ICSIT, ICSIR, Perfect CSIT/CSIR, SNR, BER, Ergodic capacity

1. Introduction

Capacity is a maximal transmission rate that can be achieved by using higher order modulation schemes but these schemes are found to degrade the BER of wireless communication systems due to less separation between the constellation points. Another approach to increase the capacity is the use of multiple antennas at transmitter and receiver, which provides multiplexing gain. It also enhances the QoS by providing diversity gain, coverage and outage by array gain. Further increase in the capacity can be achieved with parallel decomposition of MIMO channels into r (r is rank of channel matrix) SISO channels by using SVD algorithm. MIMO system performance is closely related to allocation of optimal power with the help of CSI availability. Optimally allocating power to MIMO channels is

Generation and Evaluation of IRNSS Navigation data for Spoofing Applications

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Indian Regional Navigation Satellite System (IRNSS), India's own satellite navigation system is now finding its way into various civilian and defence applications. IRNSS signals like any other Global Navigation Satellite System (GNSS) signals are weak when received by receiver on earth and are vulnerable to spoofing. Spoofing refers to generation and transmission of false IRNSS signals to mislead the victim receiver to a false position. The spoofing attack is dangerous because the target receiver is not conscious of this menace and will provide false navigation solutions which seem to be reliable. GNSS signals can easily be spoofed by making significant modifications in GNSS navigation data. In this paper, IRNSS navigation data is generated and evaluated for spoofing applications. Initially IRNSS RINEX navigation data file is obtained from the IRNSS-GPS-SBAS (IGS) receiver located at Chaitanya Bharathi Institute of Technology (CBIT), Hyderabad (lat. long) and ephemeris parameters are extracted. Ephemeris parameters are used in the computation of the satellite Position, Velocity and Time (PVT). The results show that the satellite PRN's (IRNSS 1B, 1C, 1D, 1E, 1F, 1G & 1I) are acquired and their PVT are computed. Also, IRNSS navigation data message is constructed using the extracted ephemeris parameters. The constructed navigation message is validated. Satellite positions and desired spoofing location (MGIT, lat and long) are used to compute the pseudoranges. The pseudoranges and satellite positions are given as input to the Least Square Algorithm (LSA). The output obtained is desired/spoofed location (MGIT). Further, this work can be extended to develop advanced spoofing detection and mitigation techniques.

References:

1. "Indian regional navigation satellite system signal in space ICD for standard positioning service," Indian Space Research Organization (ISRO), Version 1.1, ISRO-IRNSS-ICD-SPS-1.1, August 2017. Available: <https://www.isro.gov.in/irnss-programme>.

Implementation of Deep Learning Architectures for Classification of Skin Lesions

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Skin cancer is the common type of cancer that is affecting people across the world every day. The major type of skin cancer that is found in people is Melanoma which has a high death rate. Because of the similarity in the different types of the skin lesions, it leads to inaccurate diagnosis. So, early detection of these lesions is necessary to save the life of patients. Hence models have to be developed that can classify the skin lesions accurately. This project deals with the classification of skin lesions using deep learning CNN architectures such as LeNet and ResNet. Transfer learning has been used for ResNet architecture by pre-training it on ImageNet dataset to boost the performance further. HAM10000 dataset is collected from the ISIC 2018 challenge to test the performance of the CNN models on the classification of different types of skin lesions. The CNN models are able to classify the seven different types of skin lesions i.e. melanocytic nevi, melanoma, benign keratosis-like lesions, Basal cell carcinoma, actinic keratosis, vascular lesions, dermatofibroma. Performance metrics such as Accuracy, Precision, Sensitivity and Specificity are measured for both models and they are compared to determine the best CNN model among them. LeNet has an accuracy of 73%. ResNet model achieved a better overall accuracy of 88% on the test images than LeNet.

References:

1. K. M. Hosny, M. A. Kassem and M. M. Foad, "Classification of skin lesions using transfer learning and augmentation with alex-net", PLoS ONE, vol. 14, no. 5, May 2019.

Implementation of Deep Neural Networks for Multi-Classification of Brain Tumor Images

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Classification of brain tumor is the circular role to determine the tumors and make a treatment decision with respect to their classes. Many imaging techniques are used to detect the brain tumors. However, Magnetic Resonance Imaging(MRI) is used for this project. Because MRI provides better soft tissue than CT and MRI does not involve the radiation. This MRI uses a magnetic field and computer generated radio waves to create detailed images of the organs and tissues in our body. Deep Learning(DL) is the subset of Machine Learning(ML) and useful for the classification and segmentation problems. The Deep Learning algorithm is flexible to be adopted to new problems in the future. Segmentation plays a very important role in medical imaging, it is the division of an image into regions or categories. In this project uses two datasets, first one classifies the tumor in to three categories (Meningioma, Glioma and Pituitary). Second one is to differentiate three glioma grades (Grade-II, Grade-III, Grade-IV). In this project first step is to perform the preprocessing with respect to the two datasets. Later it involves the detection and finally it will segment and classifies the tumor images by using convolution neural network algorithm. The proposed CNN achieves a significant performance with the best overall accuracy for the two datasets are 94.3% and 96.4% respectively. The final results represent the ability of the model for brain tumor.

References:

1. Hossam H.Sultan,Nancy M.Salem, and Walid Al-Atabany, "Multi classification of brain tumor images using deep neural network,"IEEE Access,vol.7,pp.69215-69225,May 2019.

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Implementation of Impatient Backoff Algorithm for wireless Adhoc networks

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Adhoc wireless network has become one of the main growth areas of wireless network and information technology. Adhoc network is a new paradigm of mobile host wireless network. Unlike traditional mobile wireless networks, adhoc networks do not rely on any fixed infrastructure. Instead, hosts rely on each other to maintain network connectivity. One of the main factors affecting adhoc communication is the multi-hop flow in the wireless adhoc network. In this type of network, it is difficult to achieve predictable Quality of Service (QoS) due to interference between links. The project task solves this problem by implementing two algorithms, Impatient Backoff Algorithm (IBA) and Adhoc Shortest Widest Path algorithm (ASWP). In order to improve the quality of service in wireless adhoc networks, this project involves implementation of both the algorithms. First Adhoc Shortest Widest Path Algorithm is implemented and from the ASWP the optimal path for data transmission is obtained. For the obtained Optimal path, we implement Impatient Backoff Algorithm. Impatient backoff algorithm reduces the backoff delay in the event of a collision to achieve a fairer allocation of available bandwidth, and the Adhoc Shortest Widest Path algorithm provides shorter and widest path. The road to the destination is wider. Evaluate the stability and fairness of different topologies with the least number of hops and the widest bandwidth to improve the fairness of the network. A comparison is done based on the obtained throughput of the network at the active nodes of the optimal path for Exponential Backoff Mechanism and IBA. The results show that IBA achieves comparatively better throughput than Exponential Backoff Mechanism.

References:

1. Rajarshi Gupta, Zhanfeng Jia, "Interference-aware QoS Routing (IQ Routing) for Adhoc Networks", published in the proceedings of National conference, held at Jawaharlal Nehru National College of Engineering, Shimoga on 7-8 July 2016.

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The basaltic analysis for safeguarding structures nearby CBIT premises

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In this swift developing world of 21st century, where the forests and farmlands are being subjected to deforestation to meet the demands of rapid population growth. In such scenario we bring forward our project basaltic analysis for safeguarding structures. As we all know before construction there are various factors the builders, developers take note such as they examine the land. If there are any hills and mountains located at the site of construction, then it's mandatory to eradicate such hills and mountains. In order to eradicate such hills, the developers make use of explosive blasts due to which the rocks present break and can be easily transported to other places. Now as the developers make use of explosives which not only causes the huge rocks to break but also weakens the structures of all nearby buildings and if this continues on a regular basis the building may also be subjected to collapse. In such a scenario we as a team have drafted an idea to measure and monitor the vibrations that occur with the use of explosive blasts. Seismic surveying requires placing a large number of sensors in a grid pattern, triggering aseismic event, and recording accelerometer readings at each sensor. Seismic surveying employs human labourers for sensor placement and retrieval. Use of explosives, harsh climatic conditions, we propose an autonomous heterogeneous sensor deployment system using drones to plant and recover sensors. We also tend to develop an android based application to directly take note of the sensor readings on our mobile phones. With the help of this seismic survey we can be able to determine the seismic vibrations and bring to the notice of developers that if this continues it will weaken the structure of other buildings. As a result, the necessary precautions are to be made while using certain explosives.

References:

1. Y. Sherki, N. Gaikwad, J. Chandle and A. Kulkarni, "Design of real time sensor system for detection and processing of seismic waves for earthquake early warning system," 2015 International Conference on Power and Advanced Control Engineering (ICPACE), 2015, pp.285-289, doi: 10.1109/ICPACE.2015.7274959.
2. Martin Klapez, Carlo Augusto Grazia, Simone Zennaro, Matteo Cozzani, Maurizio Casoni, "First Experiences with Earthcloud a Low-Cost Cloud-Based IoT Seismic Alert System", Wireless and Mobile Computing Networking and Communications (WiMob) 2018 14th International Conference on, pp. 262-269, 2018.

Design and Simulation of Approximate Multiplier for Low Power Applications

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Multiplier is a fundamental subsystem used in digital signal processors, microprocessors and image processing applications. It is constituted by complex logic design and most power and area consuming digital blocks. In order to achieve low power and area efficient multiplier, approximate computing is used. Approximate computing is an emerging technique that trade off the accuracy which is acceptable to give a substantial improvement in power, speed and area. It can be applied in several error-resilient applications such as multimedia processing, image processing and machine learning, etc. In this paper, a rounded based approximate Wallace tree multiplier is designed and simulated using Xilinx tool. The impact of rounding technique is compared with the conventional Wallace tree accurate multiplier. The simulation results show that the approximate computing-based multiplier has significant improvement in power, area and speed.

References:

1. P. Lohray, S. Gali, S. Rangiseti and T. Nikoubin, "2019 IEEE 9th Annual Computing and Rounding Technique Analysis for Power-Area & Energy Efficient Approximate Multiplier Design Communication Workshop and Conference (CCWC), pp. 0420-0425, doi: 10.1109/CCWC.2019.8666472, 2019.
2. J. Han, "Introduction to approximate computing," 2016 IEEE 34th VLSI Test Symposium (VTS), pp. 1-1, doi: 10.1109/VTS.2016.7477305, 2016.
3. J. Han and M. Orshansky, "Approximate Computing: An Emerging Paradigm For Energy-Efficient Design," in ETS'13, Proc. 18th IEEE European Test Symp., Avignon, France, May 27-31, 2013.

DESIGN OF AN ALL DIGITAL
PHASE-LOCKED LOOP USING CORDIC
ALGORITHM*

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Abstract. This paper presents a design of an all digital phase-locked loop (ADPLL) using Cordic Algorithm. In an ADPLL all the components are digital in nature. ADPLL are being used in a lot of different applications specially in the communication. The ADPLL presented in this paper is built completely using all digital blocks i.e. Digital phase detector, Digital IIR filter and a digital algorithmic VCO. A CORDIC algorithm based phase detector and a CORDIC based VCO is used, which alters its operating frequency depending on the output of the loop filter to lock the output signal with the input signal. The proposed ADPLL model is simulated using Simulink and then the HDL version of the same is simulated using ModelSim. It was found that the proposed system exhibit excellent locking behaviour.

Keywords: CORDIC · ADPLL · DDS.

1 Introduction

1.1 PLL

A phase locked loop, PLL, is basically a control system, used to get the desired phase/frequency. A PLL consists of three blocks namely, phase detector, LPF and VCO as shown in Fig. 1.

1.2 Classification of PLLs

There are several variations of PLLs. They can be differentiated based on different blocks used and also based on whether these blocks are analog or digital. Basically, the PLL can be differentiated into three types as follows:

Analog PLL(APLL): It uses all analog blocks.

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Hyperspectral Image Segmentation and Classification using Hybrid IB-CDA with Least Square Unmixing

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Hyperspectral Image Segmentation and Classification using Hybrid IB-CDA with Least Square Unmixing

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Abstract—The hyperspectral imagery (HSI) based satellite images are to be further processed for the usage with any applications. The Hyper-spectral images must be classified to map co-ordinates from the image co-ordinates which is the most important and unavoidable step. For this process, the ground control points (GCPs) to be extracted manually from the remotely sensed images based on the ground truth values which are a time-consuming process. But conventional approaches result in the improper classification. Hence, to overcome this problem the proposed method is functions based on the Hybrid iterative block-coordinated descent algorithm-least square unmixing (HIB-CDA-LSU) for noise and un-certainties. This approach removes the various noises presented in the HSI without losing the actual information. Then, on this outcome feature entropy based super-pixel segmentation (FEFPS) is applied to divide the image into multi-temporal segments. Thus, each classification region of HSI perfectly segmented. Followed by probabilistic pixel based principal component analysis (Probabilistic-PCA) is utilized for the extraction of Hyperspectral features. Thus, the detailed features of each segmented region perfectly extracted. Then, for classifying the multi-temporal HSI satellite imagery, Multi kernel-based support vector machine (MK-SVM) based supervised machine learning classification is used. The MK-SVM has the low computational complexity and capable of classifying the various classes in the Hyperspectral image. Thus, each individual class allotted to each kernel of SVM for classifying the region. The simulation results shows that the proposed Hybrid approach gives the maximum classification accuracy compared to the state of art approaches.

Keywords— *hyperspectral imagery; least square unmixing; super-pixel segmentation; principal component analysis; support vector machine*

I. INTRODUCTION

The remotely sensed HSI data suffers from various distortions [1] due to the rotation of the satellite, rotation of the earth, sensor calibrations, atmospheric conditions, projection direction, etc. The natural images are two-dimensional representation of data, whereas the hyperspectral images

consisting multi-spectral based multi-dimensional properties. Based on the capturing environment the number of Natural images presented in the HSI is varied. Normally, HSI consisting of 50 natural images in each spectrum. The raw data which is acquired through remote sensing satellites will have too much of errors, noises due to these distortions which will reduce the quality of the acquired image. Hence the satellite images which are directly acquired from the remote satellite are pre-processed for removing the distortions and noises [2]. Thus, to overcome this problem, the recent advances in Remote Sensing are towards analysis of the earth surface from time to time for the prediction of natural disasters. Apart from this, change detection also plays a major role in monitoring the environmental conditions. Most of the real time applications with respect to military, daily-life, etc. are based on the remotely sensed data. Remote sensing could be defined as the process by which the information about an object or place or area is acquired without physically having contact with the object or place or area. This is categorized into active remote sensing and passive remote sensing based on the data which is gathered. In passive remote sensing, there are sensors which are usually termed as passive sensors which collect radiation emitted or that is reflected by the object or the area. Usually, passive sensors are designed to measure the sunlight which is reflected. Few examples for passive remote sensing are film photography, infrared, charge-coupled devices [3], radiometers, etc. Active remote sensing is one where they emit energy for the purpose of scanning objects and areas and the sensor detects the amount of radiation that is reflected from the target. Some examples are RADAR [4], LiDAR [5], etc. Active remote sensing generally relates directly to the process of acquiring images via a satellite. In the Satellite Remote Sensing, the atmosphere plays a major role since the sensors look through this to capture the surface of earth. Hence, the effects of the atmosphere play a major role in degrading the quality of images acquired. The remotely sensed images are usually in the form of digital images. For extracting useful information from these images, image processing techniques are used to enhance the acquired image which helps in visual

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Design and Development of Android Application for Virtual Birthday Present

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Abstract

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- I. Introduction
- II. Literature Survey
- III. Xml and Kotlin
- IV. Activity and Fragment
- V. Working of the App

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Abstract:

Android is an Operating System that is based on Linux. It was predominantly designed for touch screen devices like tablets and smartphones. Android Application is a software application running on the Android platform. This paper presents an Android application which is used for virtual celebration. It is shared to surprise the near and dear on their birthdays, especially during these difficult times of the pandemic. This application is developed in Android Studio using activities and fragments. It contains images and texts from the sender, wishing the receiver a "Happy Birthday". Each screen is assigned a stipulated amount of time after which the next screen appears. Due to the "Covid-19 Pandemic", people could not meet their friends and family. As a small step towards overcoming this longing, this research work presents an Android application which is a virtual birthday present. Virtual birthday present makes users feel intimate and elated, following all the Covid-19 protocols simultaneously. Moreover, using this project, there is no limit to the number of photos one can share, nor it takes extra time to download each media file. Once the app is downloaded everything is at the user's fingertip.

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Design of IoT Based Transmission Line Fault Monitoring System

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Abstract. Power is transmitted from the generation plants to end users at distant locations through the transmission lines. Due to various environmental conditions and faults may occur causing power interruption to end users, damage to the power system. The operators cannot know information about fault immediately. To classify the faults various methods have been developed such as transient analysis, phasor measurement units, artificial neural networks-based approaches, etc. The purpose of this project is to detect and classify the faults in transmission lines using IoT in addition with Fuzzy logic for fault classification. In this project we are designing a system to collect data from the transmission lines to detect and classify the faults and then data is transmitted to the cloud and SMS alert is sent to the operator. The project used MATLAB Simulink to simulate generally occurring faults and detecting them.

Keywords: IoT · MATLAB Simulink · Fuzzy Logic

1 Introduction

The transmission line serves as a critical link between the electrical power generation plants and all electricity users. Transmission lines with a length of several kilometres would be affected and service continuity is disturbed as there is a possibility that a fault will occur. Faults should be cleared at regular intervals to ensure stability. Transmission line faults cause equipment damage and instability [1]. As a result, fault protection for the electric power system is needed. Transient faults last for a short period of time, while permanent faults last for a longer period of time. Faults should be identified quickly for immediate isolation of the defective line from the device for effective defence[1]. Following that, fault classification and position must be carried out in order to restore and speed up the system's recovery. Faulty current and voltage signals are used in transmission networks to locate, detect, and classify faults [2]. The circuit breaker is used to disconnect the part of the transmission line where fault occurred from the remaining part after the relay detects an irregular signal[5].

These faults may be either open circuit or short circuit. Wearing of insulators on transmission lines, opening of conductor due to wearing, are examples of open circuit faults. A short circuit occurs when two or more lines carrying different voltages are

Development of Simple Software Receiver For IRNSS L5 Signal

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Abstract— With tremendous increase in various fields of science and technology, there is a requirement for replacement of the dedicated hardware components by means of software modules to make the systems cost effective and efficient. This paper aims to implement an IRNSS software receiver that is efficient for performing acquisition, code and carrier tracking, navigation bit extraction, navigation data decoding, pseudo range calculations and position computations. Three different types of acquisition techniques are implemented and their performance is compared based on the processing time. Tracking and navigation data extraction are carried out successfully and satellite position is estimated and validated. Two prominent algorithms are implemented to compute the user position. The simplified step by step procedure for developing Software Defined Radio (SDR) for IRNSS L5 Signal is presented. The results obtained are encouraging and would be helpful in designing the comprehensive SDR for IRNSS signals.

Keywords—IRNSS, Software Receiver, Signal acquisition, Signal tracking, User Position

I. INTRODUCTION

Indian Regional Navigation Satellite System (IRNSS) designated as Navigation with Indian Constellation (NavIC) is developed indigenously by Indian Space Research Organization (ISRO). It is developed to provide position, navigation and timing services across India and other intended regions. For the primary service area, IRNSS provides good position accuracy of better than 20 meters to users equipped with IRNSS receivers [1]. However, these receivers are

susceptible to the effect of several errors including ionospheric and multipath errors [2,3].

Software receivers have proved to be more advantageous in terms of portability, flexibility, configurability and in many other aspects, including quick modification of signals, algorithms, rapid prototyping and testing of the new receiver architectures. GNSS Software receivers act as an aid to understand the complete system with less cost and ease and can be used as a research tool. The SDR technology has progressed and evolved over the decades since mid1980's [4]. However, the SDR for GNSS has evolved over the last fifteen years or so. This paper aims to implement a fully real time IRNSS Software receiver capable of processing the IRNSS L5 signal in MATLAB and provide navigation solution to the user.

II. THEORETICAL BACKGROUND

IRNSS signal software receiver can be successfully developed by implementing three crucial phases namely, Acquisition, Tracking and Navigation solution. The process of detecting a satellite signal associated with carrier frequency and code phase of the PRN code is known as signal acquisition. Before the signal acquisition process, the IRNSS receiver antenna receives the satellite signal. The receiver then processes the received data to identify the visible satellites. If a specific satellite is realized as visible, then the acquisition process spots the signal's frequency and coding phase. Generally, there are three conventional acquisition methods. They are: Serial search acquisition, Parallel frequency search acquisition, parallel code phase search acquisition. In this work acquisition is realized using Parallel code phase search

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AUTOMATIC FRAMEWORK OF MUSIC RINGTONE EXTRACTION FROM TOLLYWOOD SONGS

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Abstract: An automatic framework is used to extract the ringtones from music automatically. In this, song is considered as the grouping of segments of music such as intro, chorus, verse, bridge, outro. Mostly the ringtone will be the 'chorus' or 'intro' segments of music. The process of manually checking each song and cropping specific parts of the song is a tedious process. Western music and Bollywood songs are widely used for ringtone extraction. The accuracy is not stable for different genres of the songs such as hip-hop, ghazal etc work, for automatic extraction of ringtone, beat tracking is done by using Simon Dixon BeatRoot followed by feature extraction process as the audio data lies within beats. Songs from Tollywood (regional) were used for experimentation. SVM and Naïve Bayes classifiers are used for comparisons. The class labels are predicted based on training samples. The accuracy gained by SVM is 62.9% with 11093 beat data and the Naïve Bayes classifier gained 75% accuracy with the same beat data. In the two datasets of experimentation Naïve Bayes performed better than SVM.

Index Terms - BeatRoot, Feature Extraction, Classification, Segment Boundary Detection.

I. Introduction

Automatic music extraction is very useful in significant fields. In this a song is taken as input and divided into segments which are considered as meaningful regions such as verse or chorus. The structure of song is usually divided into intro, verse, chorus, outro, etc. Ringtone is an audio file played on mobile phones to indicate an incoming call. Ringtones are popular because in a crowd of people with cellular handsets it is easy to identify easy whose phone is ringing.

Ringtones and ring-music bring more fun when people make calls and it remains as labor intensive work, people need to listen each and every song to set the starting point and ending point for a clip with in audio file, then extract the segment [1]. In this paper our main goal is to extract the ringtone automatically by detecting the boundaries of segments correctly with good accuracy.

Song forms are made up of a number of sections that may or may not be repeated within the same song. Some of the popular song structures are strophic (AAA) form, AAB (12 bar blues) form, AABA song form, AB or verse/chorus song form, ABC song form or verse/chorus/bridge song form. South Indian music song forms are very similar to western music forms.

A. Genres of Telugu songs

In music genre refers to musical style. Some of the popular genres of Indian music are [2]:

- Classical: The composition of classical music is based on ragas, which are the scales of seven basic

notes such as sa, re, ga, ma, pa, dha and ni. The commonly played musical instruments of this genre includes sitar, surbahar, sarod, sarangi, santoor, bansuri, pakhavaj and tabla.

- Ghazal: According to Arabic dictionary the word ghazal means 'talking about woman', it is generally a poem consisting of five to fifteen couplets known as 'shers'. The ghazals became a part of the Indian music with the invasion of Mughals.
- Pop- Indipop music is a hybrid of Indian and western musical traditions.
- Devotional: Bhakti or devotion, constitutes an important part of Hindu religious practice. The broad sweep of devotional music includes chants and readings of scriptures such as the Vishwasahasranam, Shivamahimmah stotra, Bhagavad Gita and holy mantras, such as Om Namah Shivaya.
- Folk: India folk music owes its origins to the villages, which represents the folklore and lives of the villagers
- Tribal: Indian tribal music is originated from the inhabitants of the hilly regions and they are composed among the tribals of northeast India and southern states.

Folk and tribal music was composed and performed in order to celebrate a particular festival or to deliver a message.

B. Structure of Indian song

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Technologies, California in 2017. He has been the Principal Investigator of many sponsored research and consultancy research projects in the field of neural networks and machine learning. He is also actively involved in teaching and project coordination for the Graduate and Post Graduate Program in Computer Science and Engineering Department at the National Institute of Technology Goa. He has authored a number of research papers published in reputed international journals in the area of neural networks, classification, and clustering.

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Predicting High Blood Pressure Using Decision Tree-Based Algorithm



Satyanarayana Nimmala, Y. Ramadevi, Srinivas Naik Nenavath
and Ramalingaswamy Cheruku

Abstract High blood pressure, also called as hypertension, is a state developed in biological system of human beings by knowingly or unknowingly. It may occur due to varied biological and psychological reasons. If high blood pressure state is sustained for a longer cycle, then the person may be the victim of heart attack or brain stroke or kidney disease. This paper uses a decision tree-based J48 algorithm, to predict whether a person is prone to high blood pressure (HBP). In our experimental analysis, we have taken certain biological parameters such as age, obesity level, and total blood cholesterol level. We have taken the real-time data set of 1045 diagnostic records of patients in the age between 18 and 65. These are collected from a medical diagnosis center Doctor C, Hyderabad. Records (66%) are used to train the model, and remaining 34% records are used to test the model. Our results showed 88.45% accuracy.

Keywords Classification · Decision tree · Blood pressure monitoring

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Neural-Based Hit-Count Feature Extraction Method for Telugu Script Optical Character Recognition



M. Swamy Das, Kovvur Ram Mohan Rao and P. Balaji

Abstract The recognition accuracy and efficiency of any OCR system greatly depend on the feature extraction methods. There are several feature extraction methods each has its own characteristics. These methods differ in terms of the number features that they extract and the complexity. With less number of features, the recognition accuracy may be low, and with more number of features, the recognize time may be more. The features are to be selected in such a way that they could distinguish one character from other with minimum comparisons and gives less false positives and false negatives. The accuracy of an OCR can be improved by changing the feature extraction methods. Telugu is called Italian of the east. But it is surprising that there are not many OCRs that could detect Telugu characters with fairly good accuracy. The accuracy of OCRs available in the market are either highly objectionable or the price is very high. To address this issue, we took up this project. Other problems include the segmentation of overlapped characters and right feature extraction. We tried to solve these issues, by taking a segmented character from a word and check to find a correct match for it or tell that the character does not exist so that the particular character can be re segmented. In this work, a hit-count-based feature extraction method with neural networks is used for the fast recognition even though the training time is more. The experimental results show that the proposed hit-count-based feature method greatly reduces the time by maintaining the recognition accuracy.

Keywords OCR · Hit-count · Segmentation · Feature extraction
Blob · PyBrain · Neural network · Skeleton · Skew · Backpropagation

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Abstract: Identifying interconnected groups in complex networks such as social networks, biological networks, and communication networks is an ever important task in data analysis. These interconnected groups are termed as communities in social network analysis and plays an important role in understanding the structural and behavioral properties of complex networks. In this paper, we propose a novel label propagation algorithm, called CCLPA (A Clustering Coefficient based Label Propagation Algorithm) to address the randomness issue of label propagation algorithm. Our algorithm defines the function, clustering coefficient, to measure the neighborhood connectivity between nodes quantitatively without any contact with the user. Based on the clustering coefficient, we present a new label propagation algorithm with explicit node update sequence to uncover communities in complex networks. Experiments

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on real-world network datasets demonstrate that it overcomes the random initial label selection and random label update order of underlying label propagation algorithm. Our algorithm identifies stable communities and becomes more robust and efficient. Wide experiments show the better-quality and effectiveness of the proposed algorithm.

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SECTION I. Introduction



Social network analysis has gained much attention in recent years because many real life complex systems can be represented as networks. Some of the real world networks include a network of co-authorship [1], biological networks that include neural networks [2], network of hyperlinks of web pages [3] known as World Wide Web (WWW), network of friends [4], network of food webs [5], technological network of Internet [6], metabolic networks [7], social networks, and even US political elections [8]. A network is a combination of a set of vertices interconnected by a set of ties. The ties represent various types of associations such as common hobbies, friendship, same locality, kinship, etc. Small world effect, power law degree distributions are some of the properties observed in these networks. An interesting property frequently found in these networks is the *community structure* [10] which is the point of our research work. A community with a network is defined as distinct groups of vertices gathered such that the ties within the community are dense, but the ties with the other communities are sparse [10] [11]. A social network of interactions can be expressed as a graph G containing a set V of vertices, and a set E of edges. Fig. 1 depicts a social network graph $G = (V, E)$ with three community structures [12] where $V = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11\}$ and $E = \{(1,2), (1,3), (2, 3), (2,4), (2,5), (4,7), (4,8), (5,6), (5,7), (6,7), (7,9), (8,9), (8,10), (8,11), (9,11), (10,11)\}$ such that $|V| = 11$ and $|E| = 16$.

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CCLPA: A Clustering Coefficient based Label Propagation Algorithm for Unfolding Communities in Complex Networks

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Abstract—Identifying interconnected groups in complex networks such as social networks, biological networks, and communication networks is an ever important task in data analysis. These interconnected groups are termed as *communities* in social network analysis and plays an important role in understanding the structural and behavioral properties of complex networks. In this paper, we propose a novel label propagation algorithm, called CCLPA (A Clustering Coefficient based Label Propagation Algorithm) to address the randomness issue of label propagation algorithm. Our algorithm defines the function, *clustering coefficient*, to measure the neighborhood connectivity between nodes quantitatively without any contact with the user. Based on the clustering coefficient, we present a new label propagation algorithm with explicit node update sequence to uncover communities in complex networks. Experiments on real-world network datasets demonstrate that it overcomes the random initial label selection and random label update order of underlying label propagation algorithm. Our algorithm identifies stable communities and becomes more robust and efficient. Wide experiments show the better-quality and effectiveness of the proposed algorithm.

Keywords—community; clustering coefficient; label propagation; social networks; social network analysis.

I. INTRODUCTION

Social network analysis has gained much attention in recent years because many real life complex systems can be represented as networks. Some of the real world networks include a network of co-authorship [1], biological networks that include neural networks [2], network of hyperlinks of web pages [3] known as World Wide Web (WWW), network of friends [4], network of food webs [5], technological network of Internet [6], metabolic networks [7], social networks, and even US political elections [8]. A network is a combination of a set of vertices interconnected by a set of ties. The ties represent various types of associations such as common hobbies, friendship, same locality, kinship, etc. Small world effect, power law degree distributions are some of the properties observed in these networks. An interesting property frequently found in these networks is the *community structure* [10] which is the point of our research work. A community with a network is defined as distinct groups of vertices

gathered such that the ties within the community are dense, but the ties with the other communities are sparse [10][11]. A social network of interactions can be expressed as a graph G containing a set V of vertices, and a set E of edges. Fig. 1 depicts a social network graph $G = (V, E)$ with three community structures [12] where $V = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11\}$ and $E = \{(1,2), (1,3), (2, 3), (2,4), (2,5), (4,7), (4,8), (5,6), (5,7), (6,7), (7,9), (8,9), (8,10), (8,11), (9,11), (10,11)\}$ such that $|V| = 11$ and $|E| = 16$.

Uncovering community structure play an important role in understanding and exploiting the structure of complex networks and has many applications in various fields, such as in molecular interaction networks, online social networking websites, image segmentation, and circuit layout problems. The communities, when detected, reveal interrelationship, associations, and behavioral trends among the members. For example, the research community, when detected, in a social network may reveal domain specific Special Interest Groups (SIGs) which will be further used for effective research interactions among the members [9]. A set of web pages on related topics can be found by uncovering a community of web pages that connect to two or more web pages in the same community; with the help of this, the search engines and portals can narrow down their search by searching topically-related subsets of web pages [14].

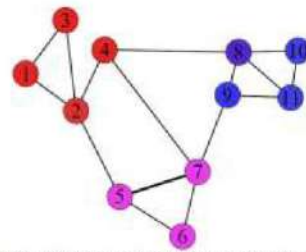


Fig. 1. A schematic diagram showing a social network with three community structures. (Drawn using Gephi network visualization tool)

The organization of the paper is as follows. In Section II, literature concerning related work is reviewed. In Section III, we give a formal problem statement and proposed algorithm

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The current methods in select-shift forgeries are built on segment matching. By taking advantage of present electrical instruments human logically blurs the boundaries of a picture. Thus, the current methods abort to detect the replicas in a pictures. To determine this issue a new path is developed to detect the select-shift using transform domain which is time invariant, to discover identical and non-identical, noise caused by the blurring the boundaries. Here we use SWT unlike discrete wavelet transform (DWT) and to withdrawal the elements using SVD. A concept of electric point fixing is introduced. An intensity based partition is used to achieve blur invariance with high detection accuracy.

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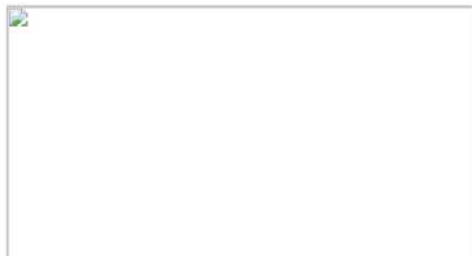
SECTION I.

Introduction



In the era of cyber world today not even an adhar card number or a pan card number or a secret account number taken as proof to approve person identity. Due to usage of highly advanced technologies and instruments by every human that makes the digital data at high risk. Digital pictures are the digital data that are taken as the main proof in law prosecution of judiciary. Due to availability of these technologies it has become easy and simple method to edit or manipulate the digital pictures. It has become a major crime scenes in order to investigate the weather picture is fake or original.

Digital forensics is the process of analysis by gathering, finding and verifying the replicas in a picture. Digital image forensics deal with study and remaking earlier actions in a picture. In this process we state the solution for detection of select-shift fake or region replicas affect, that selects the replica in a picture and place it in different region of same picture. A sample select-shift replica is shown in fig 1. The select-shift can also be called as copy-move. The detection of select-shift fake pictures becomes difficult when they are logically blurs the boundaries. Thus the traditional method fails to detect the fake regions. In this paper we propose a novel path in order to find the replicas in blurred regions. Traffic places a major problem in a country. In the case of fake traffic that is generated by software makes human to believe whether it is a genuine or fake. Live traffic images are also taken as example in order to find out fake regions to investigate the fake traffic.



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A Novel Approach for Detection of Copy-Move Forgery Detection using Transform Domain

Dr.T.Sridevi¹, B.Ramya Krishna²

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Abstract: The current methods in select-shift forgeries are built on segment matching. By taking advantage of present electrical instruments human logically blurs the boundaries of a picture. Thus, the current methods abort to detect the replicas in a pictures. To determine this issue a new path is developed to detect the select-shift using transform domain which is time invariant, to discover identical and non-identical, noise caused by the blurring the boundaries. Here we use SWT unlike discrete wavelet transform (DWT) and to withdrawal the elements using SVD. A concept of electric point fixing is introduced. An intensity based partition is used to achieve blur invariance with high detection accuracy.

Key points: SWT, SVD, DWT, intensity based partition, electric point fixing, Blur invariance.

I. Introduction

In the era of cyber world today not even an adhar card number or a pan card number or a secret account number taken as proof to approve person identity. Due to usage of highly advanced technologies and instruments by every human that makes the digital data at high risk. Digital pictures are the digital data that are taken as the main proof in law prosecution of judiciary. Due to availability of these technologies it has become easy and simple method to edit or manipulate the digital pictures. It has become a major crime scenes in order to investigate the weather picture is fake or original.

Digital forensics is the process of analysis by gathering, finding and verifying the replicas in a picture. Digital image forensics deal with study and remaking earlier actions in a picture. In this process we state the solution for detection of select-shift fake

or region replicas affect, that selects the replica in a picture and place it in different region of same picture. A sample select-shift replica is shown in fig 1. The select-shift can also be called as copy-move. The detection of select-shift fake pictures becomes difficult when they are logically blurs the boundaries. Thus the traditional method fails to detect the fake regions. In this paper we propose a novel path in order to find the replicas in blurred regions. Traffic places a major problem in a country. In the case of fake traffic that is generated by software makes human to believe whether it is a genuine or fake. Live traffic images are also taken as example in order to find out fake regions to investigate the fake traffic.



Figure: 1 select-shift replica detection

Most of the current algorithms are based on segment matching they aim to find pixel of every segment of an continuous overlap image. These methods are efficient to detect the fake regions but has failed in translations. In this case key point based techniques are useful. Key point based replicas detection methods are found on selection of high entropy

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minimise the risks involved in agriculture to which the early farmers were fully exposed. There are in particular two procedures to predict rainfall. Empirical technique and dynamical method. In our method we use the empirical technique that is based on evaluation of historical information of the rainfall and its dating to a spread of atmospheric variables over different components of the nation. The most broadly used empirical approaches used for weather prediction are regression, artificial neural network, fuzzy logic and institution approach of statistics dealing with. We use data mining techniques su...

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SECTION I. Introduction



Agriculture in India has a full-size history. nowadays, India is ranked 2nd worldwide in farm output. Agriculture and allied sectors like forestry and fisheries accounted for 16.6 percent of the GDP 2009, about 50 percent of the overall workforce. The monetary contribution of agriculture to India's GDP is regularly declining with the united states' large-primarily based economic boom. Agriculture is a form of an enterprise with a chance. The production of plants relies on different factors like on climatic, geographical, organic, political and financial elements. Accurate statistics about the character of an ancient yield of the crop is important modelling input, which is useful to farmers and authorities organisation for decision-making technique in establishing right policies associated with subsequent manufacturing. The advances in computing and information storage have provided largely at the maximum of information. The project 2 has been to extract expertise from this uncooked statistics, statistics mining that may bridge the understanding of the facts to the crop yield estimation. This task aimed to statistics mining strategies and follow them to the various variables consisting inside the database to set up if significant relationships may be discovered and the usage of fuzzy common sense to discover the circumstance of crops on a diverse situation of rainfalls. Bangladeshi student proposes Data mining techniques to predict annual yield of major crops and

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Comparative Analysis of Data Mining Models for Crop Yield by Using Rainfall and Soil Attributes

Kunal Teeda¹ Nandini Vallabhaneni² Dr.T.Sridevi³

Abstract—Till the seventies of the last century, Indian agriculture was in a poor condition. The agrarian economy was largely consumption-oriented and there were poor irrigation facilities and simple agricultural implements. Agricultural yield was very low and dependency on nature was very high. The food grains were not enough to feed the population. With a view to augment the yield, the Indian government had no option but to introduce Green Revolution. The Green Revolution was a movement towards excessive mechanisation of agriculture. The agriculturists were motivated and assisted to undertake the technology-based farming. Irrigation facilities were developed. However, the results of Green Revolution were not uniform all over the country. Neither has there been uniform impact on all kinds of crops nor has there been uniform impact on all the regions and all categories of farmers. Even today the farmer falls prey to the risks unleashed by the nature. Success or failure of rain fed vegetation depends upon the sample and amounts of rainfall. But, other factors like temperature, photoperiod and grid additionally notably influence crop boom and yield. The analysis of climate performs a key role in planning better farming structures to enhance and stabilise yields, and to design appropriate crop breeding strategies. With the use of technology, it has also become possible to minimise the risks involved in agriculture to which the early farmers were awfully exposed. There are in particular two procedures to predict rainfall. Empirical technique and dynamical method. In our method we use the empirical technique that is based on evaluation of historical information of the rainfall and its dating to a spread of atmospheric variables over different components of the nation. The most broadly used empirical approaches used for weather prediction are regression, artificial neural network, fuzzy logic and institution approach of statistics dealing with. We use data mining techniques such as clustering and classification techniques for rainfall prediction.

I. INTRODUCTION

Agriculture in India has a full-size history, nowadays, India is ranked 2nd worldwide in farm output. Agriculture and allied sectors like forestry and fisheries accounted for 16.6 percent of the GDP 2009, about 50 percent of the overall workforce. The monetary contribution of agriculture to India's GDP is regularly declining with the united states' large-primarily based economic boom. Agriculture is a form of an enterprise with a chance. The production of plants relies on different factors like on climatic, geographical, organic, political and financial elements. Accurate statistics about the character of an ancient yield of the crop is important modelling input, which is useful to farmers and authorities organisation for decision-making technique in establishing right policies associated with subsequent manufacturing. The advances in computing and information storage have provided largely at the maximum of information. The project

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has been to extract expertise from this uncooked statistics, statistics mining that may bridge the understanding of the facts to the crop yield estimation. This task aimed to statistics mining strategies and follow them to the various variables consisting inside the database to set up if significant relationships may be discovered and the usage of fuzzy common sense to discover the circumstance of crops on a diverse situation of rainfalls. Bangladeshi student proposes Data mining techniques to predict annual yield of major crops and recommend planting different crops in different districts in Bangladesh[5]. They considered the effects of biotic(pH, soil salinity), environmental(weather), and area of production as factors towards crop production in Bangladesh. Taking these factors into consideration as datasets for various districts, they applied clustering techniques to divide regions; and then they apply suitable classification techniques to obtain crop yield predictions. In the research paper by David H White and S Mark Howden[9], they focus on the climates determinants of crop productivity. They considered how the climate envelopes different crops based on temperature, moisture and light influence the distribution of cropping and other land uses around the world. They also discuss how these and other climatic variables influence the growth and yield of crops. Adaption strategies are also discussed that helps a lot to assist the crop producers to cope with the rising global temperatures and carbon dioxide (CO₂) levels, along with the often reduced rainfall, soil moisture and water availability.

II. RELATED WORKS

[1] In this paper, the author Dr. D. Ashok Kumar states that the purpose of the examination at it is to observe the best techniques to extract new understanding and information from present soil profile data contained within ISRIC-WISE soil statistics set. Numerous records mining techniques like Support Vector Machines, K nearest Neighbours, Bayesian Networks. Also various optimisation strategies like Ant colony optimisation, Particle Swarm Optimisation. [2] This review article written by Dr. Bharath Misra focuses mostly on various attributes to be taken in consideration while applying data mining techniques in the field of agriculture and also concludes that The multidisciplinary approach of integrating computer science with agriculture will help in forecasting/ managing agricultural crops effectively. [3] Sally Jo Cunningham emphasises on the usage of data mining techniques and its process model to derive innovative applications in the field of agriculture. He also visualises the applications of data mining, the goal might be to use a model predictively, to



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Region Based Semantic Image Retrieval Using Ontology

Morarjee Kolla and T. Venu Gopal

Abstract Extracting Semantic images from the large amount of heterogeneous image data is a quiet challenge in Content Based Image Retrieval (CBIR). Search space and Semantic gap reduction are two major issues in extracting semantic images. The proposed method of Region based semantic image retrieval considers both Search space and Semantic gap reduction. The proposed methodology first does the region based clustering as it reduces retrieval search space. Later it reduces the semantic gap with the support of ontology framework. The ontology framework shares the information among image seekers and domains. Our experimental results reveal the efficacy of the proposed method.

Keywords CBIR · Ontology · Search space · Semantic gap · Semantic image retrieval

1 Introduction

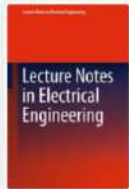
With the advancement of visual content and technologies, image plays a vital role in many of the applications and areas like medical, education, web, social media, entertainment, etc. Storage and processing of images requires efficient methods to retrieve information from image databases. With the increase in the large amount of image data, efficient retrieval mechanisms of visual information are in huge demand [1]. Efficient searching of a relevant image from different varieties of image datasets is a daunting task. Human beings are capable of interpreting image contents in high level perception, whereas a computer can interpret the image content with low level features extracted from image pixels. Hence, there is a wide gap between human

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Region-Based Semantic Image Clustering Using Positive and Negative Examples



Morarjee Kolla and T. Venu Gopal

Abstract Discovering various interest of users from massive image databases is a strenuous and rapid impel expedition region. Understanding the needs of users and representing them meaningfully is a challenging task. Region-based image retrieval (RBIR) is a method that incorporates the meaningful description of objects and an intuitive specification of spatial relationships. Our proposed model introduces a novel technique of semantic clustering in two stages. Initial semantic clusters are constructed in the first stage from the database log file by focusing on user interested query regions. These clusters are further refined by relevance feedback in the second stage based on probabilistic feature weight using positive and negative examples. Our results show that the proposed system enhances the performance of semantic clusters.

Keywords RBIR • Negative example (NE) • Positive example (PE)
Relevance feedback (RF) • Semantic image clustering

1 Introduction

Content-based image retrieval (CBIR) still faces difficulties when searching content from the large amount of image databases. Another challenge in this area is reducing the semantic gap. CBIR mainly consists of feature extraction and similarity matching. Current research focuses on CBIR systems that fetch an exact cluster of meaningful images. The process of a typical CBIR is as follows.

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SECTION I

Introduction

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Cloud Computing is the connection of large pool of systems via public or private networks in order to provision dynamic scalable infrastructure for data, application and file storage. With this computing, hosting of applications, content delivery and storage, computation costs is greatly reduced. Cloud Computing involves the reusability of IT capacity. Cloud Computing expands the skyline across the organizational boundaries when compared to traditional computing like grid, distributed, utility.

Virtualization technology can create virtual representation from a physical system. It can be applied to servers, applications, networks and storage. This technology is the cost efficient, reduces capital and operating costs, dynamically provisions resources and applications, enables scalability and disaster recovery, simplifies data center management, and increases IT productivity. Virtual Machine (VM) is a tightly isolated virtual computer with a guest operating system and applications in it. Each VM is completely independent from one another. Hypervisor or virtual machine monitor creates VMs and decouples them from the host machine. It enables multiples VMs to run on a single host machine. Hypervisor allocates dynamically the computing resources to each VM as needed. It also provides isolation between VMs at the hardware level and also saves the complete state of each VM onto separate file called VM image. VMs can also be migrated from one physical machine to another as per requirement.

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Efficient Time Shared Task Scheduler for Cloud Computing

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Dr. M. Chandra Mohan³
CSE Department
JNTUH
Kukatpally, Hyderabad, India.

Abstract- Many virtual clusters, virtual machines run in each data center hosting number of heterogeneous tasks submitted by different cloud customers. In this concept, scheduling of incoming tasks to cloud should be scheduled on to less number of physical servers which improves the resource utilization. Scheduler should also efficiently manage the load between resources and achieve minimum execution time. In this paper, we designed an efficient approach for time shared task scheduler which effectively does load balancing, resource utilization and provides high performance than existing time shared task scheduler. This algorithm has been tested using CloudSim toolkit and results were compared with existing time shared task scheduler.

Keywords- Task; VM; Scheduler; Cloud Computing

I INTRODUCTION

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II SYSTEM MODEL AND PROBLEM FORMULATION

A. System Model

CloudSim toolkit contains a time shared task scheduler for internal scheduling of tasks. This scheduler assigns a fixed amount of CPU time called time-slice for each task and tasks are executed in first-in-first-out manner for the amount of time-slice. For each task, after the time-slice period, CPU is preempted and is given to other task next in queue and preempted task is pushed at the end of the queue. In this approach, none of the tasks are starved for CPU but the larger tasks take long time to finish. So, if number of tasks increase, this approach takes much time to finish all the tasks in queue.

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Virtual Machine Schedulers for Cloud Computing

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Keywords- VM; Scheduler; MIPS; space shared; time shared; time shared over subscription; cloud computing

I INTRODUCTION

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II SYSTEM MODEL AND PROBLEM FORMULATION

A. System Model

CloudSim tool consists of Virtual Machine schedulers namely VM scheduler space shared, VM scheduler time shared and VM scheduler time shared over subscription for scheduling of VMs on Physical Machines (PM) in a data center.

VM scheduler space shared approach: This is a VM allocation policy. It allocates one or more PEs (Processing Elements) of PM to its VM based on



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[T. Prathima](#) , [A. Govardhan](#) & [Y. Ramadevi](#)

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Abstract

For effective multimedia content, retrieval audio data plays an important role. Recognising classes of audio data which is neither music nor speech is a challenging task; in this aspect, the authors proposed to work on environment sounds. To represent the audio data, low-level features are extracted. These low-level descriptors are computed from both time domain and frequency domain representation of audio data. From the extracted descriptors, midterm statistics are computed and an information system (IS) is built with class labels. From this IS using the



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A Survey on Emotion's Recognition Using Internet of Things



K. P. L. Sai Supriya, R. Ravinder Reddy and Y. Rama Devi

Abstract Emotions play an important role in human life, because the emotions allow other people to understand the feelings. Emotions are obtained due to some physiological changes in human. When a person is in a situation where he is unable to speak, then their emotions can be used to understand the feelings. By using Internet of things, the emotions are going to be detected. In the first step, the sensors are placed on the human body. These sensors will capture the data, and real-time monitoring can be done. The data which is collected from the sensors is used for the emotion detection. Here the different works on IoT which is used for human emotions capturing and detection have been discussed. The analysis of these emotions will give significant results for various frame of mind of a person.

Keywords Internet of things (IoT) · Wireless sensor network · Linear discriminant analysis

1 Introduction

Nowadays, the Internet of things (IoT) became popular around worldwide and it is playing a major role in human life. IoT is nothing but interconnection of hardware and software devices like actuators, sensors, microcontrollers, Raspberry Pi. As human want to lead a luxurious life to maintain health and easy monitoring of the devices, they want to use the things which are portable in such a way that they can be carried out to any place and can be accessed from any place. Hence, IoT is seen everywhere and anywhere. Few applications of IoT are smart agriculture, smart city, smart homes.

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A Relative Survey on Handover Techniques in Mobility Management

Pramod Kumar P* and Sagar K

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Email: *pramodpoladi111@gmail.com

Abstract. Innovation is advancing at a speedier pace and necessity for web organizations at whatever point wherever is required. To impact this vision ever to better organizations open to a customer, effective mobility managing procedures must be composed. Two key intends to execute mobility administrations are Handover and area administration. Therefore, we need to have an efficient mobility management system among heterogeneous wireless networks where several wireless networks can interoperate to provide users with good QoS. In this paper, distinctive issues related to mobility administration in the coming period of frameworks are highlighted and besides throws a light on the uncertain zones to ensure proficient mobility management.

Index Terms— Location Management, Mobile Node, Handover, Mobility Management, Mobility Models.

1. Introduction

An enormous number of termini are connected over the Internet worldwide with a mutual aim of being 24 by 7 service. This has incited improvement in all areas, business, enlightening, transportation et cetera. Now a days the network technologies are speedily continuing forward in the advancement pathway, various access administration systems have been proposed to address the issues of predictable accessibility. The organization of mentioned frameworks is the prime point of view as proposed frameworks requires more resource allocation [1]. The Figure.1: Mobility administration in various heterogeneous wireless networks shows the varied setup of systems through mobility administration structure [8].

2. Related Work

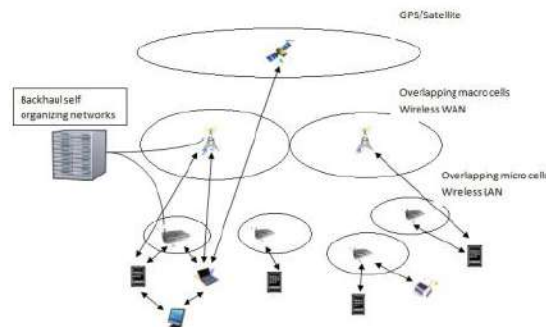


Fig. 1. Mobility in Heterogenous Network

Mobile Commerce using ECC and MQTT Protocol

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Authors S. Ramana, N. Bhaskar, S China Ramu, M.V.Ramana Murthy

Publication date 2019

Journal International Conference on Innovative Applied Energy, Oxford, United Kingdom

Pages 1-9

Publisher ISBN: 978-1-912532-05-6

Description Trading is the key factor of world's economic growth and trading has taken its shape from ancient barter system to modern mobile commerce because of advancements in technologies, Internet, use of currency and human beings livelihood.

Because of advancements in technology and a drastic improvisation in hardware front, the entire computational devices and mobile phones have changed its motto of usage, where 90 percent of market users are using palm tops, lap tops and smart phones and the human beings life style is also drastically changed where they want everything on a single click through mobile apps irrespective of time and location (anytime from anywhere). The so called e-commerce is merged with mobile communications which emerged into a mobile commerce.

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Access, Innovations in Systems and Software Engineering: A NASA Journal, Computers and Electrical Engineering, IET Biometrics, and ACM/Springer MONET. He is serving as the vice-chair for IEEE Computational Intelligence Society Technical Committee for Intelligent Systems Applications for the year 2019. He received the prestigious Innovative Student Projects Award 2011 from Indian National Academy of Engineering (INAE) for his master's thesis. He has more than 50 publications in reputed journals, reports, and conferences.

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Smart Computing Paradigms: New Progresses and Challenges pp 245–257

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[Vihar Kurama](#)  & [T. Sridevi](#)

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Abstract

The choice of image filters in computer vision has a significant effect on the image reconstruction and feature extraction. Currently, the most filters are used to enhance images for human consumptions, programmed operations and to reduce the noise, frequency levels in the image. Though it is hard to select an optimal set of filters for a given series of images, in this work, we propose to choose the best assortment of different filters for a given image as the input. By generating the pixel array of the input image, we compute all the image attributes such as

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Abstract:

The rapid growth of the internet and its connecting devices makes the things connected to the entire world. In these days, the world is running on the internet of things (IoT), with the increased communication capability and most effective way of communication and transmission lines many of things are connected to the internet. The advent and revolution in smart sensor technology attracts many of the users and most of the devices are connected to the internet. Internet connected sensors and devices generate exponential data. Knowingly or unknowingly IoT is generating lots of data. This data is significant in decision making system, but the problem is how to segregate this data for the future analysis purposes. The Internet of Things (IoT) offers engineering teams an innovative way to collect data and observe the status of their products, services and equipment in the field. Machine learning techniques are used to learn from these data to make the device or thing intelligent. For example, using the

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machine learning identifying the abnormalities from our wearable and taking necessary actions like calling doctor and ambulance automatically when it necessary.

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SECTION 1.
Introduction



The significance of automation of the industry makes the life of the person more comfortable and easy. With the advent technologies like artificial intelligence and machine learning makes the apathetic things likes computer, robot, mobile phone etc., are able to learn and intelligent. It has been anticipated that very soon all the different things that are going to be connected, that we are seeing around us. They are all going to be interconnected. Unification of technologies such as low-power embedded systems, big-data, cloud computing, machine learning and networking is required to enable the powerful technologies. The enormously generated data will be the biggest problem in these days, how can we utilized these generated data and what is the purpose of this data are the big questions. Fortunately, there is an emergent technology growing concurrently with the IoT that has the potential to stave off the hypoxia in these stagnant data lakes and instead turn them into a healthy ecosystem of usable information. By funneling big data into machine learning algorithms, engineers can breathe life into their development cycles, operations, manufacturing and more. In this work we are trying to identify the scope of the machine learning for IoT. The main challenges and trends of the machine learning techniques in deriving the knowledge for the IoT community to make the devices more automated.

The major share of the IoT comes from its connectivity, connecting anything, anytime anyplace, it make sure what is going to be observed in this new era of ubiquitous computing [3]. It makes the digital world, that is going to result in billions and trillions of things are connected. it means, Humans, everybody is being connected. When it is happened with the usage of machine

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A Review on Machine Learning Trends, Application and Challenges in Internet of Things

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Abstract: The rapid growth of the internet and its connecting devices makes the things connected to the entire world. In these days, the world is running on the internet of things (IoT), with the increased communication capability and most effective way of communication and transmission lines many of things are connected to the internet. The advent and revolution in smart sensor technology attracts many of the users and most of the devices are connected to the internet. Internet connected sensors and devices generate exponential data. Knowingly or unknowingly IoT is generating lots of data. This data is significant in decision making system, but the problem is how to segregate this data for the future analysis purposes. The Internet of Things (IoT) offers engineering teams an innovative way to collect data and observe the status of their products, services and equipment in the field. Machine learning techniques are used to learn from these data to make the device or thing intelligent. For example, using the machine learning identifying the abnormalities from our wearable and taking necessary actions like calling doctor and ambulance automatically when it necessary.

Keywords: machine learning, data analytics, Internet of things, smart city.

1. INTRODUCTION

The significance of automation of the industry makes the life of the person more comfortable and easy. With the advent technologies like artificial intelligence and machine learning makes the apathetic things likes computer, robot, mobile phone etc., are able to learn and intelligent. It has been anticipated that very soon all the different things that are going to be connected, that we are seeing around us. They are all going to be interconnected. Unification of technologies such as low-power embedded systems, big-data, cloud computing, machine learning and networking is required to enable the powerful technologies. The enormously generated data will be the biggest problem in these days, how can we utilized these generated data and what is the purpose of this data are the big questions. Fortunately, there is an emergent technology growing concurrently with the IoT that has the potential to stave off the hypoxia in these stagnant data lakes and instead turn them into a healthy ecosystem of usable information. By funneling big data into machine learning algorithms, engineers can breathe life into their development cycles, operations, manufacturing and more. In this work we are trying to identify the scope of the machine learning for IoT. The main challenges and trends of the machine learning techniques in deriving the knowledge for the IoT community to make the devices more automated.

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A Survey on Emotion's Recognition Using Internet of Things



K. P. L. Sai Supriya, R. Ravinder Reddy and Y. Rama Devi

Abstract Emotions play an important role in human life, because the emotions allow other people to understand the feelings. Emotions are obtained due to some physiological changes in human. When a person is in a situation where he is unable to speak, then their emotions can be used to understand the feelings. By using Internet of things, the emotions are going to be detected. In the first step, the sensors are placed on the human body. These sensors will capture the data, and real-time monitoring can be done. The data which is collected from the sensors is used for the emotion detection. Here the different works on IoT which is used for human emotions capturing and detection have been discussed. The analysis of these emotions will give significant results for various frame of mind of a person.

Keywords Internet of things (IoT) · Wireless sensor network · Linear discriminant analysis

1 Introduction

Nowadays, the Internet of things (IoT) became popular around worldwide and it is playing a major role in human life. IoT is nothing but interconnection of hardware and software devices like actuators, sensors, microcontrollers, Raspberry Pi. As human want to lead a luxurious life to maintain health and easy monitoring of the devices, they want to use the things which are portable in such a way that they can be carried out to any place and can be accessed from any place. Hence, IoT is seen everywhere and anywhere. Few applications of IoT are smart agriculture, smart city, smart homes.

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Unstructured Data Analysis with Passphrase-Based REST API NoSQL for Big Data in Cloud

Innovations in Computer Science and Engineering pp 457–463 | Cite as

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Abstract

The synthetic word big data is emerging from almost every source in the modern world pertaining to any and every field, either technical or nontechnical. This big data generating at a rapid pace is difficult to analyze and yield productive decisions using the traditional tools like relational stores. NoSQL data stores stand as an alternative to deal with streaming big data. Though a wide set of NoSQL databases exist, column-oriented store Cassandra and document-based MongoDB are chosen to carry out the current work due to their simplicity and easy to set up environment. Both the chosen NoSQL databases are highly scalable with minimal security added at a single node level. However, the scalability exists at either load or retrieval levels but not both as desired by an enterprise to satisfy their end users and attain huge profits out of minimal investments. Moving toward this end, there is a need to design a system in which scalable load and retrieval operations with strengthened security is to be developed. Also, it is essential to enlighten the big data users to choose an appropriate NoSQL store among abundant available ones. Hence, in this work, Passphrase-Based REST API model is developed to enhance the security for huge scalable data. Among a huge set of NoSQL data stores, Cassandra and MongoDB are chosen to carry out the research which proved worth efficient in achieving better results for drastically increasing the number of records. Also, the proposed security implemented is to further strengthen the entire system from being tampered.

Keywords

NoSQL, Big data, Cloud, Cassandra, MongoDB, Encryption, Passphrase, REST API

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SECTION I.
Introduction

Cloud is a buzz word in the recent times to assist the peculiar aspects of scalability and elasticity. Getting access to resources of any kind in a ubiquitous way is the prime motivation behind moving towards cloud. Also, it exists in various forms in terms of services and deployment models. People can choose an appropriate one based on the level of requirement and workload execution. At the other end, digital image fusion is an essential technique required to enhance the level of image security without distortion of the image with secret data hidden inside while propagating from sender to receiver [1]- [2]. The copyright protection of digital data in any form is also necessary when reaching the destination as it may tough to separate the original data from the edited one without any compromise with the quality attacked by the intruders [3].

If there is a huge set of images to be secured, then cloud can be a suitable platform to act as a house for such vast set. But the third party used to store the image is not threat free under all circumstances. Particularly in Social networking sites like facebook, linkedIn etc, where the photos uploaded out of excitement by the users are used in a contrary way to generate duplicate identity, additional layer of security is required [4]. In this work, an attempt is made to integrate the diverse fields of cloud computing and image processing to further strengthen the security of image data being transmitted across the internet.

Digital watermarking has a vital role in e-commerce, now days the use of internet is rapidly growing which produces efficient exchange of multimedia data [5]- [6]. Digital copyright is an emerging technique for embedding the information into digital content with the goal of tracing any pirated copy and redistributed it illegally. In history, many watermarking schemes have been developed for finding out the illegal copies of digital content [7]- [8]. Dittman et al. presented a watermarking classification dividing watermarks into five groups based on their

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A Secure Technique of Image Fusion Using Cloud Based Copyright Protection for Data Distribution

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Abstract — Now a day's the uses of digital content or media is increasing rapidly. So, there is a need to secure the digital document from both unauthorized users and authorized users. In this paper a secure technique of image fusion using hybrid domain for copyright protection and data distribution is proposed. The proposed method provides a secure technique for the digital content in cloud environment. Two services of cloud are used to develop this work which eliminates the role of trusted third party (TTP). Previously the user and content provider rely on this TTP. First is the design of an infrastructure as a Service (IaaS) to store different images with encryption process to speed up the image fusion process and save storage. Second is a Platform as a Service (PaaS) to enable the digital content to achieve great computation power and to increase the bandwidth. These two services provided by the cloud plays a very important role because it reduces communication overhead in the process of image fusion. Imperceptibility and robustness measures are used to calculate the performance of the proposed approach.

Keywords— *Digital Content, Digital watermarking, Cloud computing, public key cryptography, Trusted third party*

I. INTRODUCTION

Cloud is a buzz word in the recent times to assist the peculiar aspects of scalability and elasticity. Getting access to resources of any kind in a ubiquitous way is the prime motivation behind moving towards cloud. Also, it exists in various forms in terms of services and deployment models. People can choose an appropriate one based on the level of requirement and workload execution. At the other end, digital image fusion is an essential technique required to enhance the level of image security without distortion of the image with secret data hidden inside while propagating from sender to receiver [1-2]. The copyright protection of digital data in any form is also necessary when reaching the destination as it may tough to separate the original data from the edited one without any compromise with the quality attacked by the intruders [3].

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The paper is structured as follows: The First section provided introductory content to identify the need to move ahead with the proposed work in the area of amalgamating cloud with image fusion for copyright protection preservice. The second section presents the scenarios where the authors have a similar intent to integrate cloud with image processing methods with a varying set of techniques to show the effectiveness of their systems and a set of limitations are identified from the same. The third section throws a light on the proposed model with an architectural representation and modules developed as a part of the work. Fourth section evaluates the efficiency of results with the proposed model in strengthening the security of image data in cloud environment. Finally the fifth section concludes the work with a focus on future direction.

II. RELATED WORK

In recent times to assist the aspects of scalability, elasticity and security the term cloud computing is used [9-10]. Though there are a wide set of cost minimization benefits through this field, there are various security concerns to be solved with high priority [11]. Image Processing at the other end is integrated in cloud environment to strengthen the security of unstructured data, particularly image data [12]. Modern works that include integration of the aforementioned technologies are either in-existent or exist with little theoretical research [13].

The authors in [14] propose a security model for scalable big-data using NO-SQL data-stores. This may allow the eaves droppers to attack the secure data and extract confidential information. The authors in [15] propose a model to secure and enhance the image quality after reaching destination across the internet by using an integration of DWT and DCT fusion techniques. The work proposed however deals with only a few sample and structured images without taking into account a huge

DETECTING FRAUD IN CYBER BANKING USING FEATURE SELECTION AND GENETIC ALGORITHM

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Abstract : In the last decade, due to extensive development of information technology and communication infrastructure, there has been a rapid advancement in financial and banking system and Services. Banks and other financial institutions have invested in the field of modern technologies to provide more updated and efficient products and services. Thus, the variety of relevant products and services and also the number and value of transactions have increased. As online transactions became more and more popular, the frauds associated with them have also grown affecting the industry largely. Financial fraud has been a big concern for many organizations across industries, as billions of dollars are lost yearly because of this fraud. Securing transactions, detection of new ways of fraud and abuse in financial documents, the discovery of finished and unfinished frauds, detection and discovery of processes and operations of money laundering and etc. are among the most challenging issues in this area. The existing algorithms used do not give results considering different aspects of a transaction being carried out. However, there are a few researches which quote many features, but they are not practically implemented. Here a solution to the field of fraud detection in cyber banking is provided using feature selection and genetic algorithm. The bank data is given in an excel sheet and feature selection is applied to the data. To increase the accuracy of detected fraud, genetic algorithm is applied to the output of feature selection.

IndexTerms - cyber banking, feature selection, genetic algorithm, fraud detection.

I. INTRODUCTION

With the increase in the development of people's access to the internet, the use of online transactions in daily trades have increased. One of the most important problem of e-commerce is internet payment systems and fraud in e-payments.. Financial fraud can, not only cause financial damages to the relevant organization but also causes the loss of credit and damage to customer's confidence towards the system. Thus, in case of not using the fraud detection mechanisms, we should expect the increase of fraud statistics in e-banking system. Today, a large volume of financial and monetary transactions are performed on the internet. These services and transactions are not done in person. This makes the criminals remain unknown on the internet and encourages and stimulates the swindlers and fraudsters. Due to the lack of physical presence of customers in the context of electronic services, the need to recognize the identity for providing these services is very important and critical from the perspective of financial and monetary institutions. Perhaps it can be claimed that the main limitation in providing more extensive banking services is the need to recognize the identity of individuals. This issue is the most important factor of fraud attractiveness in the context of e-services and is increasing due to the development of e-banking services. Financial frauds can be widely classified as:

1. Bank fraud : It can be defined as "whoever knowingly executes to defraud a financial institution; or to obtain any of the money, funds, credits, assets, securities, or other property owned by a financial institution, by means of fraudulent pretends," that is, mortgage fraud, money laundering, etc.
2. Insurance fraud : It is the one which occurs in between the insurance process. It can happen while in application, billing, rating, claims, eligibility process etc. and are dedicated mostly by healthcare providers, consumers, agents or brokers, company employees and others.
3. Security and commodities fraud : It includes theft from manipulation of the market, securities accounts and wire fraud. It widely includes market manipulation, high yield investment fraud, commodities fraud, foreign exchange fraud, late-day trading, broker embezzlement, etc.
4. Other related financial fraud : It includes frauds such as mass marketing fraud and corporate fraud.

The fraud detection methods are divided into the two following main groups [17] :

1. Anomaly detection: In this method, the history of customer behaviour is considered a normal behaviour and any deviation from this behaviour can be recovered as an anomaly or fraud.
2. Misuse detection: This method focuses on specific behaviours of customer and assumes some unknown behaviours as a fraud. The main objective is to propose a new technique to detect fraud in e-banking using a new combination of algorithms to serve the purpose.

Financial fraud is normally discovered through outlier detection process enabled by data mining techniques, which also identify valuable information by revealing hidden trends, relationships, patterns found in a large database. Data mining, defined as "a process that uses statistical, mathematical, artificial intelligence, and machine learning techniques to extract and identify useful information and subsequently gain knowledge from a large database", is a major contributor for detecting different types of financial fraud through its diverse methods, such as, logistic regression, decision tree, support vector machine (SVM), neural network (NN) and naive Bayes.



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His main research interests include multimedia processing, social media analysis, crowdsourcing and data mining.

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Abstract

Sounds or music usually occurs in an unstructured environment where their frequency varies from time to time. These temporal variations are one of the major problems in the music information retrieval. Additionally, polyphonic music or polyphony is simultaneous combination of two or more tones or melodic line, where each line is an independent melody of an instrument. As a result, identifying various instruments from recordings of polyphonic music is difficult and inaccurate using conventional methods. In this paper, a framework is presented for predominant instrument recognition in real-world polyphonic music. The framework consists of both convolutional neural networks (CNNs) and recurrent neural networks (RNNs). CNNs are used to pull out important features that are unchanging to local spectral and temporal variations. Similarly, RNNs are used as they quickly learn the long-term dependencies in the audio signals. The results obtained by the convolutional recurrent neural networks (CRNNs) showed an improved performance when compared to network built using only convolutional neural networks.

Keywords

Convolutional neural networks Recurrent neural networks
Convolutional recurrent neural network Long short-term memory
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Sign Language Recognition System using Convolutional Neural Network and Computer Vision

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Abstract — Conversing to a person with hearing disability is always a major challenge. Sign language has indelibly become the ultimate panacea and is a very powerful tool for individuals with hearing and speech disability to communicate their feelings and opinions to the world. It makes the integration process between them and others smooth and less complex. However, the invention of sign language alone, is not enough. There are many strings attached to this boon. The sign gestures often get mixed and confused for someone who has never learnt it or knows it in a different language. However, this communication gap which has existed for years can now be narrowed with the introduction of various techniques to automate the detection of sign gestures. In this paper, we introduce a Sign Language recognition using American Sign Language. In this study, the user must be able to capture images of the hand gesture using web camera and the system shall predict and display the name of the captured image. We use the HSV colour algorithm to detect the hand gesture and set the background to black. The images undergo a series of processing steps which include various Computer vision techniques such as the conversion to grayscale, dilation and mask operation. And the region of interest which, in our case is the hand gesture is segmented. The features extracted are the binary pixels of the images. We make use of Convolutional Neural Network(CNN) for training and to classify the images. We are able to recognise 10 American Sign gesture alphabets with high accuracy. Our model has achieved a remarkable accuracy of above 90%.

Keywords: Sign Language, ASL, Hearing disability, Convolutional Neural Network(CNN), Computer Vision, Machine Learning, Gesture recognition, Sign language recognition, Hue Saturation Value algorithm.

I. INTRODUCTION

As well stipulated by Nelson Mandela[1], "Talk to a man in a language he understands, that goes to his head. Talk to him in his own language, that goes to his heart", language is undoubtedly essential to human interaction and has existed since human civilisation began. It is a medium humans use to communicate to express themselves and understand notions of the real world. Without it, no books, no cell phones and definitely not any word I am writing would have any meaning. It is so deeply embedded in our everyday routine that we often take it for granted and don't realise its importance. Sadly, in the fast changing society we live in, people with hearing impairment are usually forgotten and left out. They have to struggle to bring up their ideas, voice out their opinions and express themselves to people who are different to them. Sign language, although being a medium of communication to deaf people, still have no meaning when conveyed to a non-sign language user. Hence, broadening the communication gap. To prevent this from happening, we are putting forward a sign language recognition system. It will be an ultimate tool for people with hearing disability to communicate their thoughts as well as a very good interpretation for non sign language user to understand what the latter is saying. Many countries have their own standard and interpretation of sign gestures. For instance, an alphabet in Korean sign language will not mean the same thing as in Indian sign language. While this highlights diversity, it also pinpoints the complexity of sign languages. Deep learning must be well versed with the gestures so that we can get a decent accuracy. In our proposed system, American Sign Language is used to create our datasets. Figure 1 shows the American Sign Language (ASL) alphabets.

Identification of sign gesture is performed with either of the two methods. First is a glove based method whereby the signer wears a pair of data gloves during the capture of hand movements. Second is a vision based method, further classified into static and dynamic recognition[2]. Static deals with the 2dimensional representation of gestures while dynamic is a real time live capture of the gestures.

And despite having an accuracy of over 90%[3], wearing of gloves are uncomfortable and cannot be utilised in rainy weather. They are not easily carried around since their use require computer as well. In this case, we have decided to go with the static recognition of hand gestures because it increases accuracy as compared to when including dynamic hand gestures like for the alphabets J and Z. We are proposing this research so we can improve on accuracy using Convolution Neural Network(CNN).

Stock Price Prediction on News Data and Market Data Using ML Techniques

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Abstract: Stock Price Prediction is a progressive research area, where the returns in stocks depend on the prediction. Stock prices vary based on the market sentiment [1]. The news also plays a major role in the prediction of stock prices. So, using news for prediction may have immense consequences on the financial world. The aim of this article is to develop a model which can anticipate the stock price movements using the market data and the sentiments of news data. The proposed framework is beneficial to investors and can be used by firms to preserve shares of their shareholders. The authors have preprocessed data, feature engineered and trained data on various classification models, the model showing the highest accuracy is chosen for predicting stock prices. The authors have observed the accuracy of around 77% for the next day prediction. The accuracies decreased gradually, when the stock price movements are calculated 10 days in advance.

Keywords: Stock Price; Market Data; News Data; Classification Models; Data Preprocessing; Feature Engineering

I. Introduction

Stock price prediction is the act of predicting the subsequent value of a particular company's stock, share or any other financial share traded on an exchange. Investors would gain more profits if the prediction produces a better result. So, the stock price prediction is the active research area in this era. Market data has the information of open and close prices, volume and returns of the stock market. News data includes many features, such as word count, sentence count, relevance and sentiment score. The daily news about the companies affects the stock prices in many ways, such as the stock price may increase or decrease. Since, the news has a lot of information about the company's happenings.

Investors, before investing in any company would first do research on that company by knowing the shares of previous years, share values and profits of the company. In this process, they even go through many news articles published regarding the company to know the latest happenings in the company which would help them decide whether to buy the share, sell or hold if they already own a share.

The time series is the series of data points listed in equally spaced points of time. Mostly a stock price relevant data such as market data or news data are time series because, they are collected on a daily basis. Time series analysis comprises of methods to analyse time series data which extracts the characteristics and the statistics of the data. Forecasting of time series is the process of using a model to anticipate the future values based on historical values.

Classification models can be used to anticipate the stock price movements when given new data as an input. There are many classification models among which authors have used 4 popular models for training and predicting the stock price. The authors have used the following models: Multi-layer Perceptron (MLP), Recurrent Neural Network (RNN), Light Gradient Boosting Machine (Light GBM or LGBM), Extreme Gradient Boosting Machine often called as XG-Boost. The RNN and MLP are from Neural Networks, Light GBM and XG-Boost are from gradient boosting machines. RNN and MLP use hidden layers and activation functions to train the model. Light GBM and XG-Boost uses the inbuilt parameters which are tuned and optimised for training the model.

The primary motivation of this article comes from the challenge hosted by the company Two - Sigma on Kaggle. The company hosted market data with the values of returns calculated and news data with the sentiment of the news articles already determined. The data provided by the company have a part of US listed companies. The included set of companies change every day based on the trading amount and information availability, which means that there may be few companies which enter or leave the data on a particular day. Both, the market data and news data are used for predicting the stock price movements. The methodology used for prediction is: data collection, data preprocessing, feature engineering, building classification models, model evaluation and results analysis.

II. Literature Survey

In recent years, remarkable efforts have been put into generating models to predict the market trend or the trend of a stock price in the future.

Survey on Diabetic Retinopathy Detection

Proceedings of the International Conference on ETCTA2021

Survey on Diabetic Retinopathy Detection

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Abstract: Diabetic retinopathy is a diabetes (occurs when your blood glucose is too high) problem where the eyes get effected. The blood vessels are important as they transport glucose and insulin all over the body. Due to High level of glucose, the blood vessels get damaged and organs like heart and eyes get most effected in this condition. The tissues which are sensitive to light that are present at backside of eye get highly effected. This paper explains various stages of diabetic retinopathy detection, to classify the stages of disease the Convolutional Neural Network (CNN) is used. The diagnosis of retinal image with maximum resolution are done automatically. Taking the severity of disease as basis, classified into 5 stages. The unevenness is the major difficulty for classification of images as there exists the retinal proliferation of new blood vessels and segmentation of retina. To get the best result the blood vessels are to be analyzed properly. The process of detection of blood vessel edges or boundaries automatically is called retinal segmentation. The features get restored during region merging which are lost during the segmentation process. In order to classify these, they are sent through the image classifier. For the segmentation of retinal images U-Net is used and is trained on database called DRIVE. Diabetic Retinopathy database is taken to classify the level of Diabetic Retinopathy by training it on Convolutional Neural Network. Our approach of detection is to train Convolutional Neural Network as well as classify the Diabetic Retinopathy image levels. The Diabetic Retinopathy database is taken from Kaggle detect the Diabetic Retinopathy. The database used for training the image are taken under different conditions. These are labelled and image resolution is high. The database is approximately of 35,126 labelled images.

Keywords: Diabetic Retinopathy, U-Net Segmentation, Convolutional Neural Network.

I. Introduction

Diabetes is a metabolic disease is caused due to release of excess amount of glucose in the blood. The key factor which leads to Diabetic Retinopathy is hyperglycemia. The people with diabetes have a greater number of chances to get

diabetic retinopathy. With proper medication and frequent monitoring of eyes this can be reduced. Diabetic retinopathy has a major chance to increase if the cholesterol and blood pressure levels are high. Deep Neural Network is used for detection and classification of Diabetic Retinopathy as there is the availability of large dataset. In case of retinal proliferation and detachment of blood vessel fundus image classification becomes difficult due to high variability

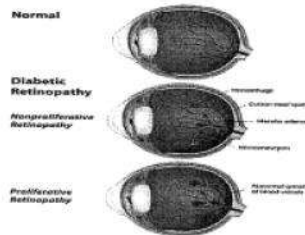


Fig 1: Diabetic Retinopathy Classification

The model called U-Net is used for segmentation of the images which are present in DRIVE database. The classification is done by using the database present in Kaggle. Convolutional Neural network is used for classification of the images. Some amount of data lose occurs during segmentation of the images; the lost data can be brought back by merging the regions.

A. U-Net Architecture

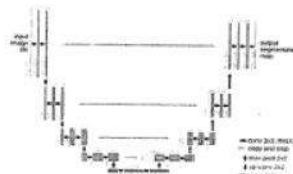


Fig 2: U-net

International Conference on Smart Data Intelligence
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Visual Question Answering with External Knowledge

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ABSTRACT

Visual Question Answering (VQA) system is an algorithm that takes an image, and a natural language question about it as input and produces an answer as the output. One of the most intriguing features of the VQA task is the uncertainty of the questions asked. To extract the knowledge required in answering them needs a spread of image manipulations. A significant part of the ongoing advancement in vision to language issues is accomplished by merging Recurrent Neural Networks and Convolutional Neural Networks. We propose a fully trainable neural network based on attribute extraction, established on the CNN and RNN design, which will apply to different vision to language issues. We do that by embedding a particular attribute representation of the scene interpretable by users. Each semantic feature corresponds to a word strip-mined from the training image description and signifies high-level information regarding the image context. We train an RCNN-based classifier for every attribute, and therefore the set of attribute likelihoods for a picture that forms a high-level representation of image content are learned. We then train an LSTM to get the captions, and answers, on the idea of these likelihoods. In light of the proposed feature-based vision to language model, the subsequent contribution is to present a means of incorporating information outside to the picture into the VQA task.

Keywords— Deep Learning; Recurrent Neural Networks; Convolutional Neural Networks; Long Short-Term Memory; Natural Language Processing; Image Processing;

1. Introduction

Visual Question answering is considered a formidable issue as it includes vision and language interpretation that is basic for human discernment. The objective of VQA is to form a system that can respond accurately to a given picture and a pertinent query. VQA research has fundamental importance and can be expanded to different tasks, for example, visual dialogue and visual narrating. As needs are, numerous scientists are putting forth constant attempts to solve the VQA problems. Past examinations have indicated that assimilating the idea of VQA and the available datasets are vital to improving performance. VQA is a vision to language task where a user can ask a natural-language query relating to an image. By using the correlation between the query sentence and the picture, a natural-language answer is generated. Similar to other computer vision tasks like image captioning and content-based image retrieval, VQA demands a top to bottom comprehension of the input image and also the question to gather the appropriate response. In this research paper, we explore how the needful data for VQA differs as the input queries change and how this data can be gathered from the multiple hierarchical layer CNN. Also, we examine the final output that can be reasoned by collectively embedding the hierarchical attributes from CNN with the semantics of the question and use a knowledge base to answer the question that requires information, the image alone doesn't contain.



Fig. 1 Example of visual question answering method

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Ionic Liquids as Green Solvents

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Edited by:

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Green Sustainable Process for Chemical and Environmental Engineering and Science: Ionic Liquids as Green Solvents discusses the application of ionic liquids as environment-friendly solvents in the extraction, separation and purification of organic and inorganic compounds, as reaction media in biochemical and chemical reactions and catalysis, and in green organic and drug syntheses. It covers various industrial applications, from polymer synthesis, to biodiesel and lubrication, paint

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systems. He has published 4 books (with Springer, CRC Press and Elsevier), 4 Patents, 127 peer-reviewed articles (h-index 55) and 30 book chapters. He is a member of various scientific societies, including ISMET, ISE, BES, BRSI, IFIBiop and AMI. He is the editor of "Bioresource Technology Reports", associate editor of "World Journal of Microbiology and Biotechnology" and is an editorial board member of the journals: 'Bioresource Technology', 'Scientific Reports', 'Molecules', 'Sustainability', 'Electronic Journal of Biotechnology', 'Biofuel Research Journal', 'Heliyon' and 'Frontiers in Environmental Science'.

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Film Based Packaging for Food Safety and Preservation: Issues and Perspectives **15**

Bishwambhar Mishra, Sunita Varjani, Monali Parida, Gayathri Priya Iragavarapu, Mukesh Kumar Awasthi, Sanjeev Kumar Awasthi, and Zengqiang Zhang

Abstract

The extensive production of conventional plastics and their use in various food industries as packaging materials create a significant threat to the environment. This ends up creating problems concerned with performance, processing, and overall cost, thus being a big question in dealing with these non-renewable materials. The bioplastics evolved during development of renewable resources. As a part of the consequences to the dynamic changes in the present demand of customer and market scenario, the film-based active packaging system is of huge importance. The application of packaging systems is not to pose as a “wrap on,” hence lowering the quality control. It should, anyway, serve as an “add on” for the protective measures taken to assure the safety and best quality of foods. This chapter aims to compile information on types of active food packaging systems, its commercial applications meant for improving food safety and quality with the extension of its life. It also describes various critical factors to be considered for commercialization, current market strategy, and legislative considerations, and application of bioplastic as packaging materials to meet ever-growing consumer demands with comparatively high quality fresh produce.

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Petroleum waste biorefinery: A way towards circular economy

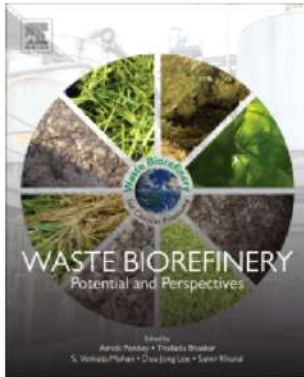


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Petroleum waste biorefinery: A way towards circular economy

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*Corresponding author

13.1 Introduction

In recent years the waste disposal sector has drawn the attention of scientists and industrialists in addressing ecological problems and hazards [1]. The planet is experiencing a steady rise in the emission of different forms of toxins from the growth of man-consumed manufacturing practices. The solid waste produced during various factories is improved daily posing a threat to the ecological system as dumping without remedial works culminating in adverse effects [2]. The new technology is progressing in the oil refining sector across the globe which results in vast volumes of fuel dumps from the refineries. The sediment is distinguished by higher carbonaceous material, typically as landfilling is used as one solution [3]. This means of way to dispose of sludge, though, is correlated with contamination of the soil and in the forest, ocean shore, and flowing rivers [4].

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Recent advancements and challenges in nanomaterial applications in biofuel production

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About the book

Description

Nanomaterials: Application in Biofuels and Bioenergy Production Systems looks at how biofuels and bioenergy can be part of the "sustainable" solution to the world's energy problems. By addressing bioenergy products compared to their fossil energy counterparts, covering research and development in biofuels applied with nanomaterials this book analyzes the future trends and how biofuels and bioenergy can contribute to its optimization.

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Recent advancements and challenges of nanomaterials application in biofuel production

Bishwambhar Mishra, Rajasri Yadavalli, Y. Vineetha and C. Nagendranatha Reddy

Department of Biotechnology, Chaitanya Bharathi Institute of Technology (A), Hyderabad, India

2.1 Introduction

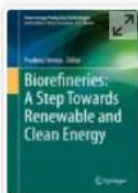
Ecological concerns, such as the greenhouse gas (GHG) effect produced by various factors, including the overuse of fossil fuels, have necessitated the search for green energy and biofuel resources. They are also due to the rapid depletion of existing oil reserves that demand alternative sources. Biofuel is widely looked to as a value-efficient and environmentally sustainable substitute for petroleum and other fossil fuels. Among the most encouraging options available for the production of biofuels is vegetable biomass, which mostly uses lignocellulosic substances and is the precursor of renewable carbon in the environment. Plant biomass often contains two-thirds of polymeric carbohydrates, belonging to the hemicellulose and cellulose groups. These can be used during bioprocesses to generate alternative fuels and some other value-added goods (Antunes et al., 2014; Jiang et al., 2017; Ullah et al., 2018). Any fuel obtained from biomass can be categorized as a biofuel, including waste from animals, plants, or algae. Biofuels from such materials produce approximately 10 to 50 billion tons per year (Abate, Giorgianni, Lanzafame, Perathoner, & Centi, 2016; Zhao, Zhang, & Liu, 2012).

2.1.1 Biofuels

The increased competition for biofuels has inspired scientists and business leaders to identify efficient strategies for biofuel production in line with geographical factors and requirements. Biofuels can be categorized on the basis of the feedstocks used for their production. First-generation biofuels are

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Biorefineries: A Step Towards Renewable and Clean Energy

Editors: [Pradeep Verma](#)

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Pradeep Verma is the Group leader of the "Bioprocess and Bioenergy laboratory" at the Department of Microbiology, School of Life Sciences, Central University of Rajasthan, Ajmer, Rajasthan, India. He is working extensively in the area of microwave/biological delignification, enzyme-mediated hydrolysis, and development of consolidated/integrated biorefineries. He has contributed significantly to the area of lignocellulosic biomass based biorefineries that is evident from his highly cited publication in peer-reviewed journals. He has contributed to several international patents. He is working as editor and reviewer to numerous high impact journals.

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Chapter 16

Electro-Fermentation of Biomass for High-Value Organic Acids



C. Nagendranatha Reddy, Sanjeet Mehariya, S. Kavitha,
R. Yukesh Kannah, K. Jayaprakash, Rajasri Yadavalli, J. Rajesh Banu,
and Parthiba Karthikeyan Obulisamy

Abstract Microbial fermentations are well recognized process for large-scale bio-conversion of organic waste biomass into high-value organic acids. It requires processes optimization, i.e., that should reach at maximum productivity and no feedback inhibition, to reduce the cost of up- and down-stream processing for commercialization. To achieve this, triggered metabolic activities are often needed that maximize the conversion of organic carbon into organic acids under non-sterile conditions. By regulating the redox balance in-situ, the specific organic acid production could be tailored in fermentation systems under mixed/mono-culture conditions. In recent years, bio-electro-fermentations (BEF) has developed as a promising approach for organic waste conversion into value products due to its

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Microstructure of NdCaCoO₃ (0 ≤ x ≤ 0.4)

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Microstructure of Nd_{1-x}Ca_xCoO₃ (0 ≤ X ≤ 0.4) For Solid Oxide Fuel Cells

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Detection of copper by localized surface Plasmon resonance based fiber optic technique

Detection of copper by localized surface Plasmon resonance based fiber optic technique

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ABSTRACT

The present article discusses a cost effective technique for the detection and quantification of copper ion by using localized surface Plasmon resonance (LSPR) based fiber optic technique. For the purpose, a small portion of a plastic optical fiber is functionalized with gold nanoparticles which are modified with 4-mercapto benzoic acid (4-MBA). The proposed is very successful in the detection of Cu^{2+} even in trace levels (ppb) in a wide range of real time samples. The results are comparable with the existing detection techniques.

Keywords: Fiber sensors, Copper detection, Plastic fibers, Surface Plasmon resonance, metal ion detection, Plastic optical fibers, straight plastic fiber probes, LSPR

1. INTRODUCTION

During recent decades, the necessity for detection of selective heavy metal ions, such as Mercury (Hg), Cadmium (Cd), Arsenic (As), Chromium (Cr), Lead (Pb), Zinc (Zn) Copper (Cu) etc., has increased immensely due to growing environmental pollution. Upsurge of metal ion concentration above the permissible limit, would prompts carcinogenesis and other severe health problems [1-4]. Copper ion pollution is one of the major contributor of the overall metal ion

Multi U-bent Cladded POF Sensors for Refractive Index Measurement

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ABSTRACT

The cladded U-bent plastic optical fiber (POF) probes with single, triple and quintuple U-bent regions investigated under this study show a RI sensitivity of 2.7, 3.7 and 2.3 absorbance units/RI units respectively. The highest sensitivity obtained here is more than 50% of decladded single U-bent POF probes, however with superior chemical resistance.

Keywords: Fiber optic Sensors, Optical Sensing and Sensors, Remote Sensing, plastic fiber, POF Sensors, U-bent fibers, Refractive index, low cost.

1. INTRODUCTION

Identification of precise refractive index (RI) changes, is an important concern in various fields such as petroleum industries, food processing, pharmacy applications, clinical diagnostics etc. Conventional RI measuring instruments suffer from limitations due to their voluminous size, inefficiency for remote monitoring and high cost [1]. Plastic optical fiber (POF) based RI sensors have recently gained attention due to their innate properties such as ease in handling, flexibility, high fracture toughness, negative thermo-optic coefficient and high sensitivity to strain. Apart from that they offer excellent compatibility to organic materials, enabling them for chemical and biomedical applications [2]. Evanescent field absorption based POF sensors could be low cost and reliable alternatives for RI measurement. Various fiber sensors such as straight decladded fiber, biconically tapered, D-shaped, micro bent, laterally polished etc. were

Antiepileptic Drug Phenobarbital: A Chemskech Study

Katanguru Laxmi*

DOI: 10.9734/bp/ncib/v1/3429F

ABSTRACT

Phenobarbital belongs to the class of medications called barbiturates. It is used to treat insomnia (difficulty sleeping) and as a sedative to relieve the symptoms of anxiety or tension. It is also used for the control of certain types of seizures. It works by slowing down the brain and nervous system. Phenobarbital is a barbiturate, nonselective central nervous system depressant which is primarily used as a sedative hypnotic and also as an anticonvulsant in subhypnotic doses.

Keywords: Phenobarbital; an anticonvulsant and ons activity; ACD/Chemskech; auxinfo; smiles notation; chemspider; ACD/3D viewer; macroscopic properties.

1. INTRODUCTION

Phenobarbital belongs to a class of drugs known as barbiturate anticonvulsants/hypnotics [1-3]. Barbiturates are substituted pyrimidine derivatives in which the basic structure common to these drugs is barbituric acid, a substance which has no central nervous system (CNS) activity. CNS activity is obtained by substituting alkyl, alkenyl, or aryl groups on the pyrimidine ring. Phenobarbital is chemically Designated as 5-Ethyl -5-phenyl barbituric acid. Phenobarbital (Fig. 1) works by controlling the abnormal electrical activity in the brain that occurs during a seizure. This medication is also used for a short time (usually no more than 2 weeks) to help calm you or help you sleep during periods of anxiety [4-6].

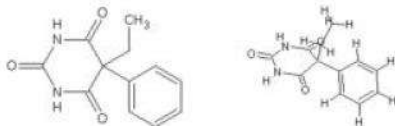


Fig. 1. Structure of phenobarbital

1.1 Hypothetical Study of Phenobarbital

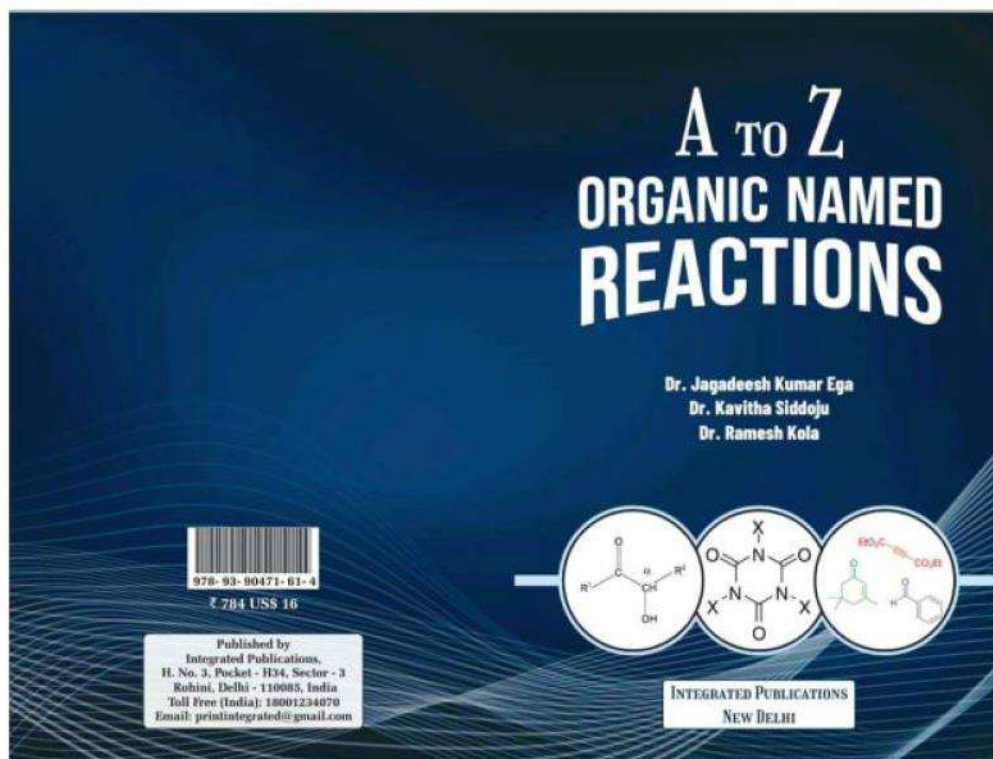
ACD/Labs [7-9] provides a Chemical Naming Service that will use our powerful software to quickly and accurately name compounds. ACD/Name features enhanced naming capabilities that allow you to generate systematic names according to both IUPAC and CAS Index nomenclature rules, in addition to generating chemical structures from names.

Molecular Formula of Phenobarbital is $C_{12}H_{12}N_2O_3$ and its Molecular Weight is 232.24.

Name of structure 5-ethyl-5-phenylpyrimidine-2,4,6 (1H,3H,5H)-trione.

InChI name of Phenobarbital.

A TO Z Organic Named Reactions





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Proceedings of Fourth International Conference on Inventive Material Science Applications pp 595–603

Modern Progression in Anode Materials for Lithium-Ion Batteries: Review

[Gubbala V. Ramesh](#), [N. Mahendar Reddy](#) & [D. Saritha](#) 

Conference paper | [First Online: 20 October 2021](#)

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Abstract

Li-ion batteries are the dynamic energy storage device presently. Li-ion batteries have broadly explored an extensive variety of areas comprising electric, information technology, hybrid vehicles and aerospace. Nanostructure anode materials with superior reversible capacity and constant cycling life are vital for the great performance of Li-ion batteries. Consequently, various new anode



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Proceedings of Fourth International Conference on Inventive Material Science Applications pp 585–594

Ordered Pt₃M (M = Early d-Block Metals) Intermetallic Nanocrystals: Synthesis and Electrocatalysis

D. Saritha, N. Mahender Reddy & Gubbala V. Ramesh 

Conference paper | [First Online: 20 October 2021](#)

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Part of the [Advances in Sustainability Science and Technology](#) book series (ASST)

Abstract

Ordered intermetallic nanocrystals have demonstrated significantly higher electrocatalytic activity and stability in fuel cell reactions such as cathodic oxygen reduction reaction (ORR) and anodic fuel oxidation reactions when compared to their counter disordered alloy nanocrystals. The improved electrocatalytic behavior may be attributed to definite structural, geometrical, and electronic structures. In this chapter, various Pt₃M

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2D Nanomaterials for Photocatalysis and Photoelectrocatalysis

Gubbala V. Ramesh¹, N. Mahendar Reddy¹, Muvva D. Prasad², D. Saritha¹, and Kola Ramesh¹

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22.1 Introduction

Two-dimensional (2D) nanomaterials attracted enormous interest since graphene was first published in 2004 [1]. Thickness of the 2D nanomaterials is in the order of nanometers, i.e. single- or few atom thickness and the properties can be tuned finely by changing the thickness of the materials [2, 3]. These 2D nanomaterials were demonstrated exceptional properties in the fields of science and engineering such as physical, mechanical, electronic, and chemical properties that were different from their bulk counterparts [4]. Therefore, the potential uses of 2D nanomaterials are explored in a wide spectrum of applications such as electronics/optoelectronics, photocatalysis, photoelectrocatalysis, energy storage, and electrochemistry [5–8]. Researchers/scientists from all over the world inspired to investigate other 2D nanomaterials such as metal dichalcogenides (WS_2 , TaS_2 , MoS_2 , etc.), layered metal oxides (LDH), metal oxyhalides (MOX), hexagonal boron nitride (h-BN), graphitic carbon nitride (g- C_3N_4), Mxenes, metal-organic frameworks, polymers, and black phosphorus [4].

Over the past few years, considerable efforts have been made to explore and develop the reliable methods for the synthesis of 2D nanomaterials. Broadly, these routes can be classified into two ways such as chemical and physical methods for, e.g. wet-chemical synthesis methods, [9, 10] chemical vapor deposition (CVD), [11, 12] chemical and electrochemical ion-intercalation and exfoliation routes, [13, 14] liquid phase exfoliation in solution phase, [15, 16] and laser thinning technique [17, 18]. The exceptional properties of 2D nanomaterials come from the capability of the captivity of electrons in their interlayers and also the covalent bond between interplanes [19]. 2D nanoarchitecture possesses a high surface area that favors high catalytic activity.

Chapter 2

Bio-Inspired Metal Oxide Nanostructures for Photocatalytic Disinfection

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Abstract

Interest in photocatalytic disinfection synthesis has increased in recent years with the use of different semiconductor photoreceptors. While much attention has been given to the photocatalytic inactivation process, researchers have shifted to focusing on bio-inspired metal oxide materials for photocatalytic inactivation in recent years. Bio-inspired metal oxide photocatalysts have unique advantages with special emphasis being placed on its highly earth abundance, economic cost of production, eco-friendliness, simple structure and easy to synthesize. Besides that, bio-inspired metal oxide photocatalysts has also been applied extensively for the development of emerging areas, such as environmental as well as energy materials. Today, the development of simple and inexpensive bacterial disinfection technology to addresses the peril of waterborne disease in the emerging areas has grown rapidly. This chapter proposes an analysis of recent research activities that involved the use of bio-inspired photocatalyst for the disinfection of water under light radiation. Various nano-structured photocatalytic materials like titanium dioxide (TiO₂), zinc oxide (ZnO), iron oxide (Fe₂O₃), nickel oxide (NiO), etc., are introduced. Material and various bacterial pathogens, photocatalytic and pathogens disinfection mechanism are described in detail. Finally, the progress of novel bio-inspired photocatalysts for the disinfection applications is discussed at the end of this chapter.

Determining the Properties of Phenobarbital an Antiepileptic Drug Using Chemcalise Software

K. Laxmi^{1*}

DOI: 10.9734/bpi/cacs/v6/5051F

ABSTRACT

Medications of barbiturate class are used in the treatment of certain types of diseases like insomnia (difficulty sleeping), and for controlling certain seizures. One such type of medicinally important compound is Phenobarbital. It is also known for its activities as anticonvulsant, antidepressant and antihypnotic [1]. Phenobarbital is used for treatment of seizures and its structure is studied with the objective of making the drug available at affordable price, wide range of action and convenience of use. With these advantages it is considered to be a most efficient antiepileptic drug and is used as nonselective central nervous system depressant. In view of medicinal importance of Phenobarbital [1-3]. Its structure and properties were studied by using chemcalise software of Chemaxon and data obtained is interpreted.

Keywords: Phenobarbital; properties; pKa, isoelectric point; logP; logD; solubility; geometry; HNMR.

1. INTRODUCTION

A compound Phenobarbital is well known medications of barbiturate class which is used in treating insomnia (difficulty sleeping). It is also used for controlling seizures caused due to Epilepsy [1-3].

By the use of Chemaxon's cutting edge technology, a powerful online facility of chemcalise was developed. In this it is possible to perform the chemical calculations, name-structure conversion, search etc. We can draw the chemical structure as an input and the calculation view gives the structure, structure-based calculations, its 3D view, the molar and exact mass. Structural properties (like atom count, Hydrogen bond acceptor count, polar surface area, polarizability are given by the calculation view. pKa, isoelectric point, logP, logD, solubility, H-NMR spectral data were also obtained in the chemcalise software.

In the present paper the structure of chemical compound Phenobarbital is drawn by using the chemcalise software and all the results obtained were presented in detail. The particulars of basic properties, structural properties, names and identifiers like IUPAC name, Traditional name, Common names, SMILES, InChI, CAS Registry numbers of Phenobarbital are provided in this paper. pKa, isoelectric point, logP, logD, Solubility, Geometry and [1] HNMR spectrum of Phenobarbital were analysed in detail as given in this manuscript.

2. BASIC PROPERTIES OF PHENOBARBITAL

The structure of Phenobarbital is drawn as the input and from the data [4,5] given (Table 1) it is clearly evident that the formula of phenobarbital is C₁₂H₁₂N₂O₃ and its composition is C=69.06%, H=5.21%, N=12.06%, O=20.67%. The molar mass of Phenobarbital is 239.239 g/mol and its exact mass is 232.084792254 Da.

Structural Aspects of Indoline-2,3-dione-3-oxime: An Approach towards Experimental and Theoretical Perspectives

K. Laxmi ^{a*}

DOI: 10.9734/bpi/nicb/v8/2243C

ABSTRACT

Indoline-2,3-dione-3-oxime (IDOX) was synthesized and characterized by IR, mass and ¹H-NMR. The Hyper Chem 7.5 software was used for quantum mechanical calculations. Study was conducted to determine molecular components of Indoline-2,3-dione-3-oxime (IDOX) and to provide information about its Structural details.

The geometry optimization was carried out using Ab Initio method. The theoretical spectral data and QSAR parameters were generated with semi empirical single point AM1 method. The HOMO and LUMO frontier orbital energies were also computed for the optimized keto and enol forms of IDOX molecule. The experimental and theoretical spectral data are nearly comparable. The pH- metry studies indicated presence of one dissociable proton in IDOX. The manuscript describes the structural aspects of Indoline-2,3-dione-3-oxime

Keywords: IDOX; Hyperchem 7.5 Software; QSAR; IR Spectral data; ¹H NMR Spectral data; Quantum chemical studies; HOMO; LUMO.

1. INTRODUCTION

Isatins (2,3-indoline-dione) are an important group of heterocyclic compounds which are biologically active and of significant importance in medicinal chemistry [1]. A literature survey identified several isatin derivatives in the development phase as potential new drugs. Isatin derivatives that have been reported to show considerable pharmacological actions such as antimicrobial, anticancer, antiviral, anticonvulsant, antiinflammatory and analgesic [2]. Indoline-2,3-dione-3-oxime abbreviated as IDOX synthesized by the condensation of isatin with hydroxyl amine was found to have number of applications.

Epilepsy is a brain disorder that causes people to have recurrent seizure. A large number of populations of different age groups and sex are affected by this disease. The estimated number of people in 2011 with epilepsy would be 11.5 million in India. The number of new cases with epilepsy, each year would be close to half a million.

Therefore, studies have been carried out for designing of newer antiepileptic drugs with reduced neurotoxicity. Recently it has been found that isatin is a novel template for designing of new anticonvulsants [3-5].

Indoline-2,3-dione-3-oxime (Isatin -3-oxime) was found to have anticonvulsant activity [6]. Literature studies revealed that anticonvulsant screening of Indoline-2,3-dione-3-oxime (IDOX) was performed by Maximal Electroshock (MES) model at dosage of 30, 100 and 300 mgkg⁻¹. IDOX was found to be active in the MES test at a lower dose of 100 mgkg⁻¹. This compound IDOX was also found to be more potent than standard drug sodium valproate.

Chapter: G-jitter effects on chaotic convection in a fluid layer

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1. Introductory Chapter: The Testimony of Condensed Matter Physics - A Viewpoint on the Achievements and Their Applications

Chapter

G-Jitter Effects on Chaotic Convection in a Rotating Fluid Layer

Palle Kiran

Abstract

The effect of gravity modulation and rotation on chaotic convection is investigated. A system of differential equation like Lorenz model has been obtained using the Galerkin-truncated Fourier series approximation. The nonlinear nature of the problem, i.e., chaotic convection, is investigated in a rotating fluid layer in the presence of g-jitter. The NDSolve Mathematica 2017 is employed to obtain the numerical solutions of Lorenz system of equations. It is found that there is a proportional relation between Taylor number and the scaled Rayleigh number R in the presence of modulation. This means that chaotic convection can be delayed (for increasing value of R) or advanced with suitable adjustments of Taylor number and amplitude and frequency of gravity modulation. Further, heat transfer results are obtained in terms of finite amplitude. Finally, we conclude that the transition from steady convection to chaos depends on the values of Taylor number and g-jitter parameter.

Keywords: g-jitter effect, nonlinear theory, rotation, chaos, truncated Fourier series

1. Introduction

The study of chaotic convection is of great interest due to its applications in thermal and mechanical engineering and in many other industry applications. It was introduced by Lorenz [1] to illustrate the study of atmospheric three-space model arising from Rayleigh-Benard convection. Some of the applications are production of crystals, oil reservoir modeling, and catalytic packed bed filtration. He developed a simplified mathematical model for atmospheric convection given below:

$$x' = Pr(y - x), \quad (1)$$

$$y' = x(R - z) - y, \quad (2)$$

$$z' = xy - \beta z. \quad (3)$$

This model is a system of three ordinary differential equations known as the Lorenz equations. These equations are related to the properties of a two-dimensional Rayleigh-Benard convection. In particular, the system describes the rate of change of three quantities convection, temperature variation vertically with respect to time. These equations are related to the properties of two-dimensional

The effect of gravity driven thermal instability in the presence of applied magnetic field and internal heating

The Effect of Gravity Driven Thermal Instability in the Presence of Applied Magnetic Field and Internal Heating

SH. Manjula,^{1, a)} Palle Kiran,^{2, b)} and S. Narayanamoorthy^{3, c)}

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Abstract. This paper deals with the weakly nonlinear thermal instability problem between two infinite parallel surfaces under an imposed magnetic field and time-periodic gravity modulation. In this case gravity has two parts: a constant part and an externally imposed time-dependent part. In addition to applied magnetic field, the layer is heated internally. We focus on stationary convection using the slow time scale and arrive at the real Ginzburg-Landau equation. The classical fourth order Runge-Kutta method has been used to solve the real Ginzburg-Landau equation. This equation gives finite amplitude of convection and helps to analyze the effect of heat transfer in the presence of magnetic field and modulation. The effect of various parameters on heat transport has also discussed. It is found that, the heat transport can be controlled by suitably adjusting the frequency and amplitude of modulation. The applied magnetic field is to diminish the heat transfer in the system. It is concluded that both concepts internal heating and applied magnetic field regulate heat transfer.

Keywords:-Ginzburg-Landau Equation, Gravity modulation, Applied magnetic field, Internal heating.

1. INTRODUCTION

In this paper we study the impact of time-periodic oscillations of the Rayleigh Benard convection in the presence of applied magnetic field with thermal modulation by weakly nonlinear analysis. We derive the Ginzburg-Landau equation focussing on stationary finite amplitude convection. We study heat transfer from this equation and discuss the impact of thermal modulation on heat transport. An excellent review of the studies related to magneto convection has been reported by Yu et al.[1], Thomson [2] and Chandrasekhar [3]. The effect of thermal modulation on linear instability of Rayleigh Benard convection is reported by Venezian [4]. The shift in the critical Rayleigh number has been calculated as a function of frequency modulation and wavenumber. It has been reported that frequency of modulation having a significant effect on instability of the layer with its proper tuning. Among the early studies on gravity modulation, Gresho et al.[4] and Malashetty et al. [5] using small amplitude approximation studied the effect of gravity modulation in a fluid and porous layer. They showed that the system could be stabilised or destabilized based on the tuning of the frequency of modulation. With periodically varying gravity of the plane investigated unsteady equilibrium of a fluid in the layer. The two component fluid convection under applied magnetic field is reported by Rudraiah et al.[6]. They have shown that the magnetic field acts as a third diffusing component to suppress onset convection.

In the presence of gravity modulation either linear or nonlinear studies have been reported by Bhadauria [7–10] and Kiran et al.[11–19]. In their studies the effect of gravity modulation has been investigated on different fluid and porous models either for linear or nonlinear theory. In situations like radioactive decay or relative weak exothermic reactions the fluid layer offer its own internal heat generation (IHG). It is because of IHG that there is a thermal gradient among the interior and exterior of the earth's crust with multi component liquids. It is the main reason of the energy for celestial bodies to warm and active. Other important and relevant application can be seen in the theories of geophysics, reactor safety analyses, fire and combustion studies, metal waste form development for spent nuclear fuel and storage of radioactive materials are very few. However there are few studies reported on internal heating of the convective flow. Some of them are given by Tveitereid et al.[20,21], Tasaka et al. [23], Takashima [23], Bhadauria et al. [24, 25], Kiran et al.[26]. No data is reported on thermal convection in the presence of applied magnetic field and internal heat generation.

The unsteady flow of free incompressible viscous fluid in an infinite vertical channel in the presence of applied magnetic field investigated by Rao et al. [27]. They have considered viscous dissipative heat along with the free convection currents. It is reported that variations of velocity field, temperature field and skin friction are influenced by applied magnetic field. The study of heat transfer in the presence of magneto convection is reported by Bhadauria et al.[16]. It is reported that under the effect of magnetic field modulation heat transfer can be suppressed more than that



Techno-Societal 2020 pp 569–578

Students Perception and Satisfaction Towards ICT Enabled Virtual Learning

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Abstract

According to the Ministry of Education, 2010 "The Education service is that which moulds young generation into good citizens, who become conscious with their responsibilities towards the family, society and country. The present COVID 19 Pandemic has largely affected the lives of scholars round the world. They missed the possibility to interact one on one basis with their teachers as all the governments temporarily closed the academic Institutions. Due to this, the importance for technology based learning has become more prominent which resulted in ICT enabled learning called Virtual learning. It particularly becomes

Dr. Bhuwaneshwari Melinamath

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Students Perception and Satisfaction Towards ICT Enabled Virtual Learning

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Abstract

According to the Ministry of Education, 2010 "The Education service is that which moulds young generation into good citizens, who become conscious with their responsibilities towards the family, society and country. The present COVID 19 Pandemic has largely affected the lives of scholars round the world. They missed the possibility to interact one on one basis with their teachers as all the governments temporarily closed the academic Institutions. Due to this, the importance for technology based learning has become more prominent which resulted in ICT enabled learning called Virtual learning. It particularly becomes important to grasp how this ICT enabled learning helps the scholars, who lay strong foundation for better Society, therefore the present research aimed to look at the student's



Role of Stakeholders in Promoting MOOCs

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Abstract

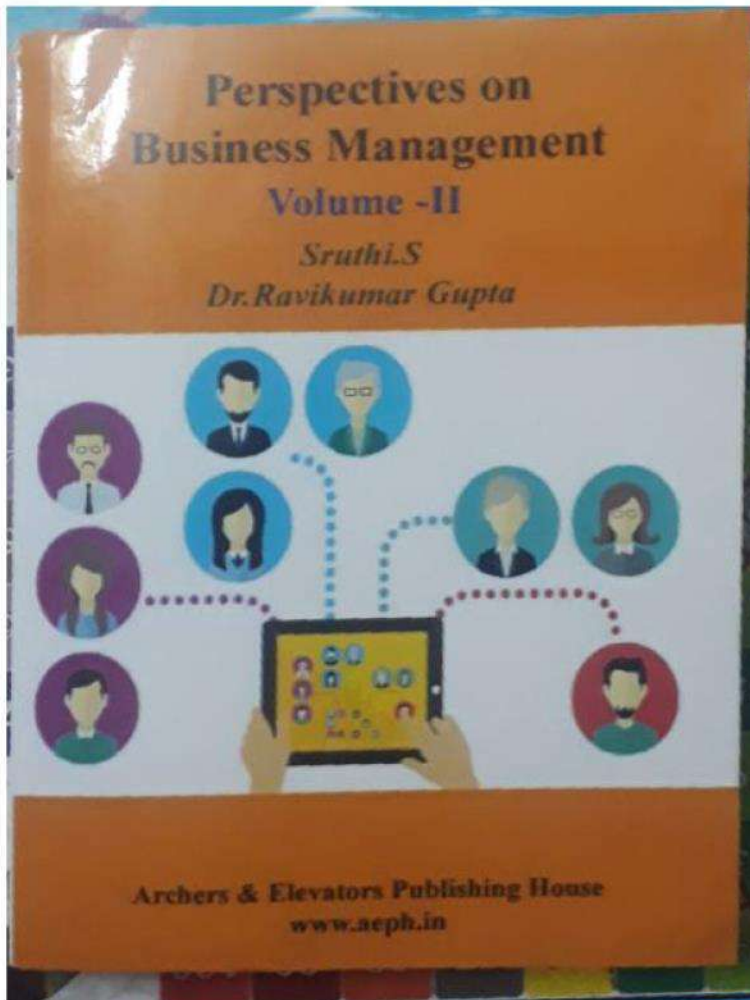
Massive Open Online Courses (MOOCs) have emerged unitedly of the foremost potential tools in proffering quality education and large coaching to an enormous domain of audience worldwide. On one hand it reaches a world domain of learners, associate degree, on the opposite hand it promulgates data in an economical digital platform, besides intertwining an enormous network of scholars, scientists, professors, scholars, academics and completely different stakeholders associated with education. It is believed that this new openness movement could be a real game changer, because it has the potential to widen access to lifelong learning, address key gaps in ability development, and ultimately enhance the standard of life for millions. There is even some hope in India that MOOC courses could also be able to play a crucial role in closing the ever widening gap of attainment and in reducing youth state. There is a necessity to form a solid systematic structure for the validation and recognition of accomplishment of the courses from online sources as Coursera, edX and SWAYAM, UGC, and different academic authorities that seeks cooperation between these establishments. This wildcat study addresses the role of the necessary stakeholders in promoting MOOCs.

Keywords: MOOCs, lifelong learning, literacy, stakeholders of MOOCs.

Introduction

The two research martyrs Siemens and author Downes had coined the word MOOC in the year 2008. Massive Open Online Courses provided the scholars with the possibility to scan and study flexibly for anyone from any corner of the globe at any given time i.e., anyone with an honest web access across the world will have access to the net courses. There are also several establishments where academics and professors truly suggest students to take the net courses as they will gain some further data. Thanks to the present pandemic scenario, the usage of the MOOCs have increased due to the vast support offered by MOOCs platforms not solely by students. However, conjointly academics gift in these courses either teaching or they themselves square measure learning new things.

India proclaimed official SWAYAM MOOC Platform in the year 2016. SWAYAM stands for (Study Webs of Active-Learning for Young Aspiring Minds). This platform was originated by



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SOCIAL MEDIA BRANDING AND ITS EFFECT ON BRAND LOYALTY

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ABSTRACT

The rapid rise of social media and web technologies has captured the attention of marketers and consumers globally. Social media provides platform for companies/brands to engage in two-way communication with consumers. Nowadays, consumers are no longer considered as passive recipient. These platforms have offered a podium to consumers wherein they can open their hearts. Brands/companies have to respond to their queries/concerns/ complaints quickly. Additionally, building, maintaining a loyal base of consumers are one of the main objectives for marketers for a very long time. Marketers have utilized various means to maintain the brand loyalty of their customers. One of the recent means is the social media marketing. The aim of the study is to identify the impact of social media marketing on brand loyalty, given that the concept is receiving increasing traction from academicians and practitioners. The scope of the study consists of customers who follow at least one brand on the social media. The sample size for the study is 200 and a five-point Likert scale is used to collect the data. Exploratory factor analysis and Regression analysis was employed to analyse the collected data with the help of SPSS. Results showed that respondents get more influenced towards social media platforms. The results of the study showed that brand loyalty of the customers is positively affected when the brand showcases attractive campaigns, relevant content, offers popular contests, deals, appears on various platforms and offers applications on social media. Based on the results, the study can be considered as a forerunner in this new area of marketing, and propose strategies for the practitioners.

Keywords: social media; two-way communication; brand loyalty.

INTRODUCTION

Social Media Marketing has emerged as the most popular and effective tool of integrated marketing communication. The companies are using social media campaigns to attract the prospects and making the existing customers brand loyal. Now, firms are not the only source of brand communication as social media allows the consumers or prospects to communicate with many other consumers from all corners of the world.

Brand loyalty may be a pattern of consumer behaviour through which consumers tend to urge committed to a selected brand or product and make repeat purchases over time. Businesses plan different creative marketing strategies like reward and loyalty programs, incentives, trials and brand ambassadors to make brand loyalty. Those who are loyal to a specific brand don't purchase a substitute brand just in case the well-liked brand is unavailable.

Chapter-12

An Assessment of Financial Planning for Salaried Employee in Financially Distressed Times

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Abstract

Financial Planning is process of framing objectives, policies, procedures, programs and budgets regarding the financial activities of a concern or individual. This ensures effective and adequate financial and investment policies. The need to plan and save for a secured life is becoming even more critical post spread of COVID 19 pandemic that shaken the pockets of not individuals but also big business entities. This planning no longer restricts to simply putting money aside every month. However, it also includes investing the savings for getting returns. Investment is the employment of funds with the aim of getting return on it. It is the commitment of funds which have been saved from current consumption with the hope that some benefits will accrue in future. So, the first step to investment is savings. This study highlights the various factors like Spending Behavior, Savings, Investments, Provisioning for emergencies etc. which influence the financial planning of salaried individuals.

Keywords: *Financial Planning, Tax Savings, Salaried Employees*

Chapter-4

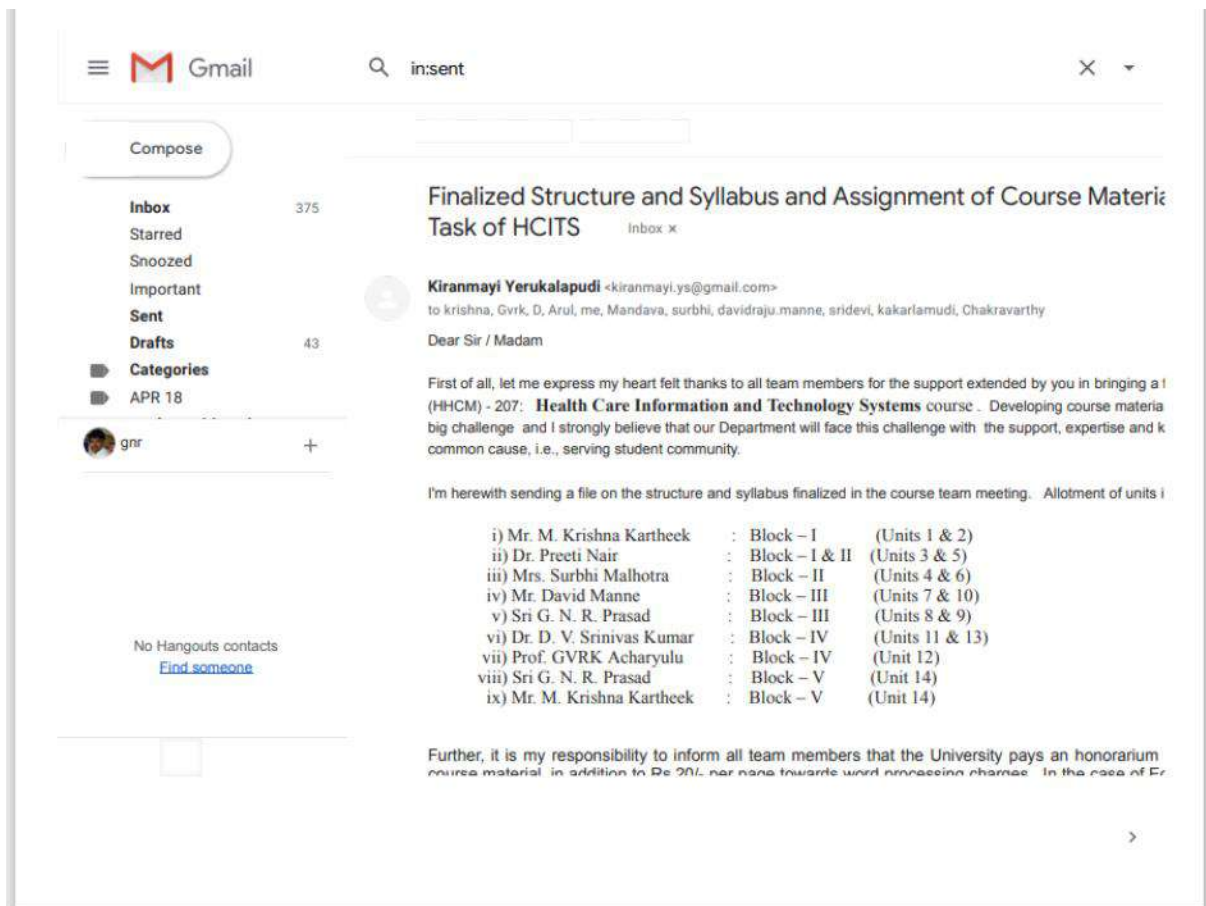
**A Study on Financial Distress of 3 Major
Automobile Companies in India - Using Altman's
Z Score**

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Abstract

The present study is focused to examine and compare the financial health of 3 major players in the Indian Automobile Industry. Altman's Z score model is employed to examine and predict the financial distress of considered 3 companies. Secondary data related to required financial indicators as per Altman's Z score model is being collected for 5 years i.e., 2015-2019 from the annual reports of respective companies. 2020 is not considered for the present study as it was the year when most individuals and business houses were in Financial Distress condition due to the COVID-19

Data Analytics using Variational Autoencoder using IoT



Thyroid Diagnosis Using Multilayer Perceptron



Advances in Decision Sciences, Image Processing, Security and Computer Vision pp 452-459 | Cite as

Thyroid Diagnosis Using Multilayer Perceptron

B. Nageshwar Rao , D. Laxmi Srinivasa Reddy  & G. Bheskar 

Conference paper | First Online: 13 July 2019

561 Accesses

Part of the [Learning and Analytics in Intelligent Systems](#) book series (LAIS, volume 3)

Abstract

Thyroid disease is one of main origin of serious medical issues for human subsistence. Therefore, proper diagnosis of thyroid disease is treated as an important issue to determine treatment for patients. A new approach on Multi-layer Perception (MLP) using back propagation learning algorithm to classify Thyroid disease is presented. It consists of an input layer with 4 neurons, 10 hidden layer with 3 neurons and an output layer with just 1 neuron. The relevant choice of activation objective and the number of neurons in the hidden layer and also the number of layers are achieved using MLP test and error method. The proposed

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COVID-19 Time Series Forecasting of Daily Cases, Deaths Caused and Recovered Cases using Long Short Term Memory Networks

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COVID-19 Time Series Forecasting of Daily Cases, Deaths Caused and Recovered Cases using Long Short Term Memory Networks

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Abstract— Novel Coronavirus (COVID-19) outbreak that emerged originally in Wuhan, the Hubei province of China has put the entire human race at risk. This virus was declared as Pandemic on 11th March 2020. Considering the massive growth rate in the number of cases and highly contagious nature of the virus, machine learning prediction models and algorithms are essential to predict the number of cases in the coming days. This could help in reducing the stress on health care systems and administrations by helping them plan better. In this paper the datasets used are obtained from the John Hopkins University's publicly available datasets to develop a state-of-the-art forecasting model of COVID-19 outbreak. We have incorporated data-driven estimations and time series analysis to predict the trends in coming days such as the number of cases confirmed positive, number of deaths caused by the virus and number of people recovered from the novel coronavirus. To achieve the estimations, we have used the Deep learning model long-short-term memory network (LSTM).

Keywords— Deep learning, Artificial Neural Networks, Long-Short-Term Memory (LSTMs), Pandemic, COVID-19, Coronavirus.

I. INTRODUCTION

The World has been affected by a highly contagious virus called the Corona virus or SARS-COV-2. This virus originated in the wet markets of Wuhan, Hubei province of China during December 2019. This virus quickly spread to more than 160+ countries within a span of 3 months causing over 400,000 deaths with more than 8.9 million people affected globally[7]. This virus has caused very distressing times across all the countries and significant disruptions in global economies. Several intervening measures have been taken by the affected countries such as quarantining people to stop the spread of the virus.

Coronavirus being a contagious and infectious disease like the flu with certain growth patterns, such patterns are noted to be non-linear and dynamic in nature. Data is Dynamic in nature as the cases might differ based on the seasons, populations etc. [2]. Thus a deep learning model based on long short term memory networks using Pytorch framework can be used to predict the data accurately.

Deep learning power in the field of Artificial Intelligence can be established by recurrent neural networks (RNNs) and

LSTMs. These models are one of the best dynamic models that are used to generate sequences in multiple domains such as recognizing speech and music, emotional tone prediction for a piece of text (sentiment-classification of text), caption generation and machine translations [3]. There are different methods to achieve the task for time-series analysis. Machine learning algorithms like Linear and Logistical Regressions, SVM etc., are at the center of these applications [6]. While these tools are great in examining observations and reaching to conclusions, they come with some serious limitations. In most cases the data is skewed and relativistic. Considering this a robust new method using deep learning models are inevitable to gain time series forecasting results with higher accuracy.

II. CONCEPTS

A. Artificial Neural Networks (ANN)

ANNs are programmed to try and simulate a human brain by modelling the neural structure on a smaller scale [3]. ANN consists of interconnected web of nodes joined by edges known as neurons. The main function ANN is to perform progressively complex calculations on a set of inputs, then use the output to solve a problem [2]. ANNs are used for lots of different applications. An ANN typically consists of 3 layers namely input, hidden and output layers. Neural net can be seen as a result of spinning classifiers composed in a layered web; this is because every node in the hidden layer and output layer has their own classifier.

B. Recurrent Neural Networks (RNN)

Recurrent neural networks (RNN) find their best usage when the patterns in data vary with time. This deep learning model is a simple structured model with a built-in feedback loop that allows it to act as a forecasting-engine [15]. In the feed forward neural network signals have unidirectional movement from input to output one layer at a time. In RNN the layer's output is added to the next input and fed back into the same layer. Contrary to feed-forward neural nets, an RNN can accept a sequence of values as input and produces a sequence of values as output, the capability to operate in sequence unfolds RNN to a wide variety of applications [13]. It is possible to obtain a capable net of more complex outputs by stacking RNNs one on top of another [20].

Cloud-based Internet of things for Smart Water Consumption Monitoring System

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Abstract - The levels at which groundwater is depleting around the world is alarming and there is an impending necessity to be judicious with water usage. This led to the formulation of a consolidated architecture to monitor water consumption at the household level. Internet of Things (IoT) is combined with the Thingspeak Cloud Computing platform and Android Studio to facilitate an efficient dashboard for consumers. The proposed model aims at imbuing a sense of responsibility in the citizens as it helps keep a track of water usage periodically using visually appealing charts, lays down the monthly water utility costs as well as provides tips with all in the form of a compact android application in their phones that is needed to be proactive and conserve resources. This paper presents a tested prototype and the pipeline connecting the hardware and software components responsible for streamlining the process of data transfer from IoT to cloud and from cloud to the android application. An overview of the promising technologies and frameworks that have been orchestrated in the development of the system as well as results obtained are thus provided.

Keywords - Water Consumption Monitoring System, Internet of Things(IoT), Thingspeak Cloud, Android Studio

I. INTRODUCTION

Water is one of the primary sources of survival for all life forms on earth. A lot of our day to day activities such as bathing, cooking, washing is dependent on the use of water. The community needs water for various activities beginning with the production of food [6] and irrigation. But now the world is heading towards a water crisis due to the excessive and uneconomical use of water by the large human population[8]. The World Economic Forum has announced in 2015 that the water crisis ranks the eighth global risk with the highest likelihood of

occurring within 10 years[4]. This has left many fearing that the shortage of water is probably going to be the most important cause of conflict in the coming years[1]. The importance of groundwater conservation practices has undergone a gradual increase as it can lessen wastewater discharge which can further result in improved water quality. They also diminish the necessity to search for or create new water sources, leaving them in reserve for future use. Hence it is extremely important to conserve groundwater by constantly monitoring and regulating usage starting at the individual household level. The designated system strives to achieve just that. One of the main objectives of the system is to imbibe a sense of responsibility in the citizens by preaching the importance of water and its conservation. The monitoring dashboard provides tips for being conservative with the daily usage consumption and also allows them to set limits on the same. Once the limit is approached or has reached, the consumer receives an alert regarding the same, leaving room for usage reduction.

Some of the real-time applications of the system in the domestic/household-front include -

- i. Track units of water consumed hourly/daily/weekly/monthly.
- ii. View live analysis of consumption statistics in the form of interactive charts.
- iii. Set limits on water consumption and receive alerts when the limit approaches or has reached.
- iv. Receive monthly water utility cost bills and log reports based on the units consumed.
- v. Be mindful of the usage by receiving tips on conservation timely.
- vi. Educate residents as well as house help personnel.

The organization of the rest of the paper is as follows. Section II briefly overviews the technology involved

Multi-Functional Blind Stick for Visually Impaired People

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Multi-Functional Blind Stick for Visually Impaired People

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Abstract— One of the biggest problems faced by the visually impaired is navigating from place to place, be it indoors or outdoors. Further, the adverse conditions of the roads make it even more difficult for them to walk outdoors. They have to be alert at all times to avoid consequences like colliding with stable or moving obstacles, ascending or descending staircases, slipping down wet terrain. Also, at times they may be in distress and might want to send an alert message to their relatives or friends about their whereabouts. These problems of blind people can be addressed with the intervention of technology. The proposed solution employs the Internet of Things (IoT) paradigm to provide a medium between the blind and the environment. Several sensors can be used to detect anomalies like obstacles, staircases and wet terrains respectively. The prototype discussed here is a simple, sophisticated and affordable smart blind stick equipped with various IoT sensors and modules. Also, this solution provides a way to send a message about the whereabouts of the user to the concerned people. Adding to the above, a software application is designed to help the acquaintances of the blind to manage the stick's configuration ex: add or delete phone numbers to which alert messages have to be sent. Misplacing the stick indoors can also be a substantial issue. This solution also addresses this problem.

Keywords— smart blind stick using IoT, obstacle detection, wet terrain detection, alert messages, finding misplaced stick.

I. INTRODUCTION

According to the World Health Organization, there are nearly 285 million people with some form of visual impairment out of which 86% people have low vision and 14% people are blind. Vision is one of the most important senses to humans to survive. Vision helps to connect with the surroundings. People deprived of vision rely on other dependencies like a simple walking cane or other people. In familiar places like the interiors of a house, they memorize the site directions, obstacles on their way and navigate according to them. However, it is not always safe for the blind to rely on their memory to move from one place to another. Especially when they are out-doors. Not all the times blind people are offered help from others and hence there is a need for a device, such as a stick, which can assist the visually impaired people in all forms of life.

The main characteristics for the stick to be useful to every visually impaired person is for it to be efficient and cost effective. The obstacles such as people, vehicles, stones in the outdoors and stairs, walls, furniture in the indoors hinder the way of the blind. The blind stick developed, alerts the user about various obstacles through a vocal sound from

a speaker on the stick. The stick can also detect wet and damp surfaces and raise a vibratory alert to the user.

To a person who is visually impaired, a mobile phone doesn't effectively serve the purpose to send a panic message whenever the person ends up at a location unknown to him. A simple button on the stick will do the job of sending a message to the acquaintances of the blind person. A software application is designed to let the acquaintances change, add or delete the phone numbers. The user can also set up the phone numbers with the help of the supplier, who has admin access to change the phone numbers. To assist the user if a stick is misplaced, a remote with button is provided, which when pressed, makes a buzzer sound on the stick.

II. RELATED WORK

Smart blind stick is an innovative stick which is designed for visually impaired people for improved navigation. The smart stick proposed by M. P. Agrawal [1] can identify all obstacles in the path using a water sensor, ultrasonic sensor, RF module and GPS-GSM module installed in it and pass it on as vibrations to notify the user about hurdles on the way. A blind stick named iWalk by R. F. Olanrewaju [2] has a water sensor integrated therein that activates a distinct buzzer if it detects water. The system also has a wireless RF remote control that produces a sound when pressed, which helps in locating the stick. A stick guide model was proposed by K. B. Swain [3] which consists of GPS and GSM which sends SMS whenever the person needs help. It uses an ultra-sonic sensor to detect obstacles and an infrared sensor for level detection. Nadia Nowshin [4] proposed an Arduino Nano based stick which detects the obstacles using Ultrasonic sensors and an android mobile application to help a blind person. Radhika R [5] developed a model which can detect obstacles within the distance of about 3m with the help of infrared, ultrasonic and water sensors. The blind person can also communicate his location to his guardian using GPS and GSM modules. A blind stick by Manikanta K [6] is integrated with an ultrasonic sensor along with light and water sensing. It sends a signal to sound a buzzer if an obstacle detected is close enough. O.B. Al-Barrm [7] proposed a 3D ultrasonic walking stick in which buzzer and vibration motors are activated when any obstacle is detected. The stick is also equipped with GPS and GSM to communicate the location of blind people. The main component of P. Sharma [8] is the ultrasonic sensor which is used to scan a predetermined area around blind by

Forex exchange using big data analytics

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Abstract. Analysis and Prediction of forex has gained immense value in today's economy. The stock price prediction is a difficult process owing to the irregularities in stock prices. Every trader wants to know if the pattern has been repeated in past to know what the possible output of the current situation will be. The primary objective is to propose a methodology that will use a historical dataset and provide a more accurate prediction on stock price. In this paper, we will be using machine learning pattern recognition algorithm on forex tick dataset. The learned model then will produce pattern from the given dataset and on the pattern of increasing or decreasing, the buyer will initiate a buy or sell the stock respectively. We will use python coding to execute the algorithm in jupyter notebook. Matplot library will help us to perform graphing in the process and Numpy will be helpful in doing statistical analysis of data.

1. Introduction

Every trader wants to find out the pattern of the forex before he makes any decision of making small or big investment in that forex. These changes in forex market reflect directly to the economy of the area. There is abundance of algorithms that could be found on the Internet that allows the user to predict the next change in forex market. Most of these are just a hoax and a way to manipulate people. We are going to find out patterns by plotting together the lines of those patterns on graph, which are very much similar to on another. Then we will perform back test on these results. A forward test can be performed on the upcoming data that has been produced after the prediction of the data but that data cannot be back tested to give the guarantee that it is indeed a suitable prediction.

We are using python here because it is a single threaded language, it uses single core of CPU, which means one script will use only one CPU (see ref. [8]-[14]).

We have many variables to be accounted for, not just the explicit ones but implicit ones too. Some of the explicit variables are percent change as pattern recognition, start point to current location percent change, fixed pattern length, fixed value/weight of pattern irrespective how old or new the data is.



A System for Efficient Examination Seat Allocation

Charitha Tuniki  Vanitha Kunta & M. Trupthi

Conference paper | First Online: 09 January 2020

644 Accesses | 1 Citations

Part of the [Advances in Intelligent Systems and Computing](#) book series (AISC, volume 1079)

Abstract

Examination seating arrangement is a major issue faced by an institution. A university consists of a large number of students and classrooms, which makes it difficult for the university authorities to design seating arrangement manually. The proposed solution provides an efficient set of algorithms for examination seating allocation problems. It also gives the best combination of rooms to be utilized for the examination and dynamically organizes seating based on the orientation of the room and students. The described solution encompasses methods to address some common issues like eliminating students who are ineligible to write

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Applying data mining technique to predict trends in air pollution in Mumbai

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Abstract. Prediction of air quality is a topic of great interest in air quality research due to direct association with health effect. The prediction provides pre-information to the overall population of the area about the status of pollution on which they can take precautionary measures and can protect their health. The problem arises when the level of SO₂, NO₂ and residual suspended particulate matters in the air increases than that of their restricted level. In this paper, the Prophet Algorithm, open source software, is applied to predict the trend of air pollution in the city of Mumbai, Maharashtra. The Prophet is machine learning algorithm to forecast and also to predict time series data. It is based on additive model where non-linear trends are fit with yearly and weekly seasonality. The graphical results are generated after using this algorithm which shows the trending pattern of the pollutants in the air of Mumbai.

1. Introduction

Nowadays, the continuous and strict monitoring of air pollutants is of great importance in the process of evaluating regulatory control measures related to air quality [1]. Many countries are installing and actively monitoring the air pollutant matters in order to keep them under control. Air quality reports for the various region of the country are published regularly [2][3]. As a result, data are getting accumulated and this results in generating various reports, including statistical one in order to find different pattern among those data.

In our paper, two hazardous gas, sulphur dioxide and nitrogen dioxide are considered because both of these gases are most harmful and we have collected the dataset containing these two gases [4][5]. Scientific research has proven that these gases have many negative effects on human health. Sulphur dioxide is significantly a toxic gas that can cause inflammation and irritation of the respiratory system, whereas Nitrogen dioxide, another toxic gas for human beings, can form nitric acid with water in the eyes, lungs, mucus membranes and skin [6]. Exposure to high concentrations of NO₂ can cause lung



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Estimating Savings Potential of Solar Energy

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Abstract: The climatic conditions in India are among the best that can be used to maximise solar energy potential and are capable enough to make solar energy serve the purpose as an alternative source of electricity to Thermal and Hydro electricity. However, the high installation costs of the solar panel coupled has prevented solar energy growth in the country. But when looked at from a broader perspective, solar energy can decrease the costs for electricity as well as help to reduce the adverse effects of using non-renewable energy resources like Thermal electricity. The proposed system determines a mechanism to estimate the amount of savings that an individual could make by using a solar panel on their rooftop. Deep Learning is applied to process and segment the rooftop images while removing obstructions such as trees, electric poles etc. and estimate the area of the rooftop. The solar radiation values and weather patterns of a region are considered and the calculated area is used to predict the amount of energy that can be produced by installing a solar panel on the roof.

Keywords: Solar Energy, Deep learning, Image Segmentation, RoofTop Detection, Cost Estimation, Area Estimation, Solar Panel, Energy Savings

I. INTRODUCTION

Research studies have stated that solar energy could be used to produce electricity that could serve the requirements of the present human population. However, most of the human population is either still not aware of that fact that solar energy can serve as a reliable source of energy or assume that it is a costly process to install a solar panel. So, this paper proposes a model that can give an estimate of the amount of savings that a consumer can make if he uses solar energy to meet his electricity needs. This model considers various factors such as the solar radiation factor of the region, weather conditions, the efficiency of the solar panel etc. This paper aims to convey the importance and feasibility of a renewable source of energy to serve the purpose while saving the non-renewable sources from extinction.

II. RELATED WORK

The research by Sara Najem [1] discusses the usage of Solar Analyst of ArcGIS to estimate Beirut's potential solar power gains from the installation of photovoltaic panels (PV) and calculate the number of benefitting subscribers. [2] discusses the extraction of rooftop images by integrating four co-relative priors namely depth cue, uniqueness, shape and transition surface in order to overcome the issues like different rooftop sizes and heights and provide more accurate results. In [3] the authors propose a system that calculates the distance between two points using Haversines formula from the Google Maps data. In [4] the authors propose a solution to calculate the solar potential using latitudes and longitudes of the building. The authors in [5] propose a system that is used to detect rooftop images from satellite imagery and also

helps to identify the areas of vegetation and shadows using color invariants. In [7] the author discusses an example system that provides a utility to predict the power generated from wind and solar resources based on the real time observations while addressing the Big Data needs.

III. EXISTING SYSTEM

In the existing system, there is no mechanism to detect, analyse and estimate the power savings from a rooftop image. While there is a system that used to detect the rooftop alone, there is another system that uses a different mechanism to predict the area of the rooftop. However, a system was built by using solar panels manually and put the region under observation for a period to estimate the savings. There are several disadvantages to the existing systems. Few of them are listed as follows:

- Requires excessive manual efforts
- No system to determine the solar potential directly
- Not considering the weather conditions of the region

IV. PROPOSED SYSTEM

As electricity is becoming one of the basic necessities for mankind and a major part of it is being generated using non-renewable sources of energy, there is a need to make humans realise that solar energy can serve as an alternative to serve their purpose. This paper proposes a system that can be used to estimate the savings that an individual can make by installing a solar panel on their rooftop. The model developed takes a rooftop image as the input and gives an estimate of the amount of money one can save by installing a solar panel. This model also considers the solar potential of the region, the irradiation factor and the weather patterns that are determined based on the location of the user. The fundamental tasks involved in determining the savings potential of the region are RoofTop detection and Extraction, Estimation of Area on Rooftop available to install a solar panel and calculation of Units that are generated using those panels.

A. Flow Chart

The flowchart of the proposed system (see fig 1.) represents the various steps involved in determining the solar savings potential of the region. In the first step, the model takes a rooftop image as the input which is processed and in the second step, the rooftops are detected and extracted using Hierarchical RGB-D priors as shown in [2]. In the third step, the extracted rooftop area is processed and the area up to which solar panels can be installed on the roof is estimated. The resultant area along with the irradiation factor, the solar potential of the region and efficiency of the solar panel are fed to the next step where the solar savings potential of the region is calculated.



Influence of titanium oxide fillers on the tensile and flexural properties of E-glass fabric/epoxy composites

Balu Maloth ^a  , N.V. Srinivasulu ^b, R. Rajendra ^c

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Recent Trends in Mechanical Engineering pp 65–79

Non-premixed Combustion Analysis on Micro-Gas Turbine Combustor Using LPG and Natural Gas

[Ch. Indira Priyadarsini](#) [✉](#), [A. Akhil](#) & [V. Srilaxmi Shilpa](#)

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Abstract

Gas turbine effectiveness is mainly having an effect on design of combustor; in this work, studies have been made on different parameters of a typical micro-gas turbine (MGT) that changes the flow inside the burning area. A combustion room is created by utilizing SOLIDWORKS modeling tool and exported to workbench design modeler where computational fluid dynamics analysis is performed by ANSYS fluent. We considered a probability density function (PDF) of

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Non-premixed Combustion Analysis on Micro-Gas Turbine Combustor Using LPG and Natural Gas



Ch. Indira Priyadarsini, A. Akhil and V. Srilaxmi Shilpa

Abstract Gas turbine effectiveness is mainly having an effect on design of combustor; in this work, studies have been made on different parameters of a typical micro-gas turbine (MGT) that changes the flow inside the burning area. A combustion room is created by utilizing SOLIDWORKS modeling tool and exported to workbench design modeler where computational fluid dynamics analysis is performed by ANSYS fluent. We considered a probability density function (PDF) of LPG fuel with non-premixed combustion mode and activated in radiation model of P-1. Design criterions of chamber height and number of holes on flame tube are varied to get the optimum performance and also considered as two dead zones in between the combustion and dilution zone. The optimized design chamber resulted in a turbine inlet temperature (TIT) of 1301 °K with a velocity of 620 m/s and also is provided with low NO_x emission below 54 ppm.

Keywords Micro-gas turbine · Radiation P-1 · CFD fluent · Non-premixed

1 Introduction

Energy is a crucial property in order to run any machine, one of the highest forms is an electrical mode which is easily transferred over a long stretch and can be generated almost anywhere by using proper technology. Solar PV cells or lense, windmills, turbines, both steam and gas, nuclear and hydro are some of mechanisms that produce energy. Out of all, gas turbine has its own merits over other types; therefore, it focuses on this aspect: it gives electrical power from the burning of inflammable fuels such as petroleum products, hydrogen gases, and air mixture; when the mixture burns, the

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65

An Experimental Investigation of Self Compacting Concrete containing Recycled Concrete Aggregates

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ABSTRACT:

There is an increasing demand for production of Self-Compacting Concrete (SCC) now in the present construction industry, which has its roots in the early 1980's. As everyone in the construction industry are searching for an alternative to traditional concrete, this SCC has been providing best solution and rectifying all the problems that were faced by using traditional concretes. The application of recycled aggregate in Self Compacting Concrete (SCC) is influenced by the quality of the concrete from which the recycled aggregates are generated. In recycled aggregates, mortar gets attached to it. The physical and mechanical properties of the recycled aggregates relate to the quality and quantity of the Recycled Aggregate Concrete (RAC) produced.

This paper highlights the properties of recycled concrete aggregates produced in Hyderabad (India) in comparison to the properties of Natural Aggregate prescribed in Indian Standards. It briefly discusses about some of the guidelines/specifications of recycled concrete aggregate adapted for structural applications in various countries, and also describes the outcome of tests carried out on the use of Recycled Concrete Aggregate in Self Compacting Concrete. Recycled aggregates used in this study were produced by crushing of Construction and Demolition Waste (CDW) collected from buildings being dismantled for renovation. Seven different concrete mixes were produced; five recycled concrete aggregate percentages viz. 0%, 25%, 50%, 75% and 100% with varying fly ash content. Investigation on Utilization of RCA in M30, M50 and M70 grade Self Compacting Concrete based on the experimental studies carried out at Research center JNTUH-Hyderabad. on Self compacting concrete(SCC) made of recycled concrete aggregate(RCA), conclusions are drawn on their utilization for making concrete with the help of modified Nan Su mix design, regular mixing technique and with the addition of mineral admixtures. Tests were carried out for compressive strength, split tensile strength and flexural strength. The findings from the study show that the recycled concrete aggregate may be useful for construction industry as an alternative for natural aggregates. However, further research is needed particularly on the long term field performance of the recycled aggregate concrete before it can be used with confidence.

Keywords: Self Compacting Concrete (SCC), Recycled concrete aggregate (RCA), Indian Standards(IS), Mix design



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Performance Characteristics of Self-cured Recycled Aggregate Concrete with SCM's

[Lakshmi Thotakura](#)  [Sankar Kumar Reddy Pullalacheruvu](#),
[Ganesh Babu Kodeboyina](#) & [V. Krishna Rao Mupparisetty](#)

Conference paper | [First Online: 21 November 2020](#)

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Part of the [Lecture Notes in Civil Engineering](#) book series
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Abstract

Self-cured recycled aggregate concrete with shrinkage reducing admixtures is one of the pioneering researches in the construction industry. There is a possibility of depletion of natural resources due to prolonged consumption over a period of time in our modern civilization. In this research, characteristics of recycled aggregate concrete with supplementary cementitious materials (SCM) like powdered limestone and fly ash with self-curing agent PEG6000 were investigated along with the

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Mechanical and durability studies on blended pozzolonic concretes with fly ash & recycled aggregates

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ABSTRACT

This paper reports mechanical and durability studies of blended pozzolonic concretes. Blended concretes were produced by partially replacing the cement by 25 percent fly ash and the Natural Coarse Aggregates (NCA) were replaced by Recycled Coarse Aggregates (RCA) in different fractions of 0, 25, 50, 75 and 100 percentages. Mechanical properties like Compressive Strength, Stress Strain behavior, and Modulus Of Rupture (MOR) of concrete and durability studies like carbonation depth and accelerated corrosion are reported. Experimental studies revealed that the compressive strength, Stress Strain Curves, Modulus of rupture of blended concrete having a resemblance to conventional concrete with NCA, at an optimum replacement level of 25 percent of Fly ash by weight of cement and 75 percent RCA by weight of NCA. It is observed that the carbonation depths were increased with increased content of RCA. Charge Deterioration Factors ($C_{a,DF}$) for a given effective cover, at a given duration of charging for NCA are lesser than that of RCA, which demonstrates corrosion resistance of NCA when compared to other mixes.

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1. Introduction

Mechanical properties of concrete governs the performance of concrete under various structural loading conditions. It has been reported in the literature that the compressive strength decreases generally from 10% to 20% than that of natural aggregate concrete with increase in RCA amount at the same w/c ratio [4,5]. The shape of the stress-strain curve for of Recycled Aggregate Concrete (RAC) was correlative to that of the Natural Aggregate Concrete (NAC), regardless of the RCA content, which leads to the denouement that there would be no objection in the design modus operandi and exercising the theory of plasticity [6]. The flexural strength of RAC has been found to decrease with increase in RCA replacement ratio [7].

This present study investigates compressive strength of concrete, Stress-Strain behaviour, and modulus of rupture with fly ash partially replacing cement and RCA replacing NCA. Experimental studies affirms that the compressive strength, elastic modulus and modulus of rupture are having a close similitude to standard concrete with NCA at an optimum replacement level of 25 percent of Fly ash and 75 percent RCA.

2. Experimental details

Two types of Concrete mixes i.e., M35 and M45 grades were proportioned with different replacement ratios of Natural Coarse Aggregates (NCA) to Recycled Coarse Aggregate (RCA) (100:0%, 75:25%, 50:50%, 25:75%, 0:100%) respectively. Fly Ash content is 25% by weight of cement in all the mixes.

Mechanical properties like Compressive strength, stress strain characteristics, modulus of rupture were evaluated on standard cubes, cylinders and prism specimens as per IS 516. Durability properties like carbonation depth and Charge deterioration factors were evaluated on Cylindrical specimens of size 150 mm diameter and 300 mm height and prism specimens of size 150mmx150mmx500mm respectively.

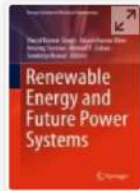
3. Materials

OPC 53 Grade conforming to IS 12269-2013 [8], and Class F fly ash conforming to IS 3812 (Part 2)-2013 [9], were used. Local river sand conforming to Zone II of IS 383:2016 [11] was used as fine aggregate. Natural Coarse Aggregate (NCA) considered for the

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Converter/Inverter Topologies for Standalone and Grid-Connected PV Systems

[Sudhakar Babu Thanikanti](#) , [Dalia Yousri](#), [Dalia Allam](#), [M. B. Etebia](#) & [Karthik Balasubramanian](#)

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Abstract

Selection of a suitable power electronic converter to meet the desired outcome for any sort of application is a major step. In the case of solar photovoltaic (PV) systems, the right selection of a converter has a significant impact on its efficiency. Over the past few decades, scholars have carried out a great deal of analysis to satisfy load specifications. The electronic power converters produced vary from several milliwatts to megawatts of power depending on requirements. A thorough analysis of these

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Dehaze Model to Improve Object Visibility Under Atmospheric Degradation

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Abstract—Optically captured images from the outdoor scenes will be humiliated by natural occurrences of Fog, Mist and Haze. This is due to atmospheric absorption and scattering of visible information, resulting in poor object visibility. It is necessary to estimate the quantifiable parameters of this atmospheric degradation to improve the visibility. Dehazing models attempt to estimate scattering parameters. Single image dehazing models are observed to possess estimation of inaccurate textures, thereby leading to blocking artifacts. The imbalances in the concentration of atmospheric particles and air-light are crucial, that should be mitigated. The available models have to be improved in terms of image parameters such as contrast, saturation and color information. The work reported in this paper emphasized the model that estimates intensified transmission map from the hazy images with color distortions and thereby exploiting scattering parameters for dehazing.

Index Terms—Semi-inverse image, Hue Disparity, Contrast, Depth map.

I. INTRODUCTION

Visibility is a measure of clarity of the atmosphere. A clear scene is obvious for low-level image analysis as well as for high-level object recognition. Outdoor image captured by the satellite or drone has large structured objects relatively represented by less number of pixels. The visibility degradation in aerially captured images is because of the terrible medium which consists of the particles and water droplets in the atmosphere.

The international definitions of visibility range for different weather conditions is depicted in Figure 1 [1]. Due to atmospheric absorption and scattering of the light from source to observer due to haze, fog, smoke, mist, etc., effects the information in the outdoor images. As a result, the contrast and color fidelity is lost in the outdoor images acquired under various weather conditions. The presence of different sources of interference in imaging makes its modeling very challenging. Therefore, recovering from degraded image is always a challenging task and it is ongoing interest in the image processing and computer vision fields.

Developing image dehazing techniques helps many real world applications like intelligent vehicles, remote sensing, under water imaging, etc. In security systems, detecting suspicious objects like aerial/balloon bombs, airdropping of

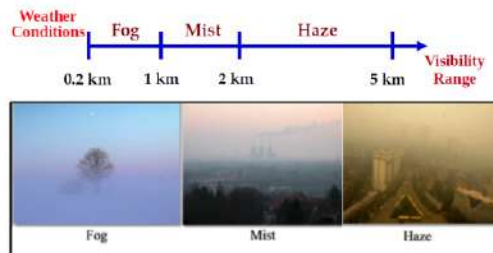


Figure 1: International definitions of visibility range [1]

weapons, small explosive devices lying on the ground, land-mines, etc., is a cumbersome issue, when the scene radiance is degraded due to the atmospheric conditions. Apart from this, when the color of these objects is similar to the atmospheric background then it is a cumbersome task to identify them.

Scattering effects pose new challenges in the form of degradation on the computational aspects of image analysis [2]. The path radiance is the main contribution for hazy image and the haze transmission can be estimated using the dark pixels. Searching the dark objects locally in the whole scene can be used to construct haze thickness map [2]. Upon subtracting the haze thickness map from the hazy image, allows one to recover the haze-free image at the sensor. Therefore, there is a need to model a framework for enhancement of images which is insensitive to environmental conditions. The overview of dehazing models is discussed in the next section.

II. OVERVIEW OF DEHAZING MODELS

The dehazing models are of two kinds- non-model based and model based. The restoration performance of non-model based approaches such as Gamma-correction and Histogram equalization is not that effective when compared to model-based approaches to address all types of haze levels. The model-based restoration algorithms are classified based on the number of input images used for restoration. In multi-image haze models, images captured at different degrees of polarization using a polarizer [3], [4], [5] or a special imaging

Correlation Factor-based Fault-Phase Detection for Series Compensated Transmission Line

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Abstract— Distance relays are designed to perform correctly on a resistive/inductive power system. If series capacitors are introduced, the voltage and current relationships deviate from their normal way especially when the fault levels are not sufficient to flash-over the gaps or to produce significant conduction in the Metal Oxide Varistors (MOV). A compensated line imposes problems to directional relaying schemes due to voltage and current inversion situations, operation of MOV which protects series capacitor and reactance modulation issues. In this paper, a novel methodology is proposed to identify faulty phases based on correlation factor computation. The presented method is tested on series capacitor compensated transmission lines (SCCTLs) for the IEEE-14 and IEEE-57 test systems. Simulation results show that the proposed method has identified the correct fault zone. Simulations are done using PSCAD/EMTDC platform.

Keywords— Distance Relay, Series Capacitor, Series compensated transmission line, MOV, PMU, wide-area monitoring system(WAMS), supervise zone of protection, adaptive out-of-step relaying.

INTRODUCTION

The series capacitor protection unit may affect the accuracy of fault location in transmission line. Its location in the middle or end of the line can affect the accuracy of the result [1]. Without phase of the fault detection, the fault detection problem is incomplete. If any communication link fails in the network, then information required to obtain fault detection will be incomplete. Fault direction estimation is also an important part in a fault detection algorithm. The Estimated fault direction may be either upstream or downstream should be investigated.

A phasor-based technique for fault location is described in [1]. Paper [2] has described a fault location technique on double-circuit series-compensated lines using two-end unsynchronized measurements. Here MOV is considered in its natural environment without having any modeling inaccuracies. A nutshell about introduction to a phasor-based fault location algorithm is presented in [3]. In Ref. [4] MOV is considered in the natural environment and it is avoiding any modeling inaccuracies.

The presence of a series capacitor and its overvoltage protective devices (metal-oxide varistor (MOV) and/or air gap) create problems to distance relaying based transmission-

line protection. Different problems associated with relays have been discussed in [5, 6] that include phenomena like voltage/current inversion, sub-harmonic oscillations, transients etc.

But, the above literature has failed in considering the impact of the series capacitor protection unit, detection of Phase of the fault, considering the communication link failure and, in fault direction estimation.

In this paper, the behavior of series compensated EHV transmission lines during faults is simulated. The importance is given on the impact of capacitor protection on modern techniques (MOV protection). A novel methodology is proposed to identify faulty phases based on correlation factor computation. Under various fault conditions, the proposed method is tested for its validation. The presented method is tested on series capacitor compensated transmission lines (SCCTLs), IEEE 14 bus and IEEE 57 bus test system with their various configurations and contingency combinations and performance is observed with transmission line both end voltage profiles. Distance characteristics are also drawn for various zones of protection. This faulty phase identification algorithm gives better results compared to the detection of faulty phase by imposing the tolerance limit method and the polar plot analysis gives more insight about the zone of the fault and chance of mal-operation.

I. SINGLE AND MULTI-PHASE FAULT PHASE DETECTION

In the proposed work, a novel methodology is proposed to identify faulty phases based on correlation factor computation. Linear correlation coefficient r is a measure of how similar the two signals or variables are. The mathematical expression for computing r is as follows:

$$r = \frac{n \sum AB - (\sum A)(\sum B)}{\sqrt{n(\sum A^2 - (\sum A)^2/n)(\sum B^2 - (\sum B)^2/n)}} \quad (1)$$

Here, n indicates the number of pairs of data. The value of r varies between -1 to +1. The positive and negative signs indicate positive linear correlations and negative linear correlations, respectively.

Positive Correlation: A and B vectors are said to have a strong positive linear correlation if r value is near to +1. If r value is exactly +1, then it indicates a perfect positive fit. A Positive

A Modified H-Bridge Transformerless Photo Voltaic Neutral-point-clamped inverter with constant common mode voltage”

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A Modified H-Bridge Transformerless Photo Voltaic Neutral-point-clamped inverter with constant common mode voltage

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Abstract—Nowadays, transformerless PV inverters (TPVI) are more popular due to its excellent features such as lower in size, cost and higher in efficiency, as compared with conventional inverters. Undoubtedly it leads dangerous leakage current via stray capacitors to the ground, which results higher current ripples and problems related to electromagnetic interference (EMI). Therefore, a several configurations have been proposed with reduced leakage current and constant common-mode voltage (CMV). In this paper a modified H-bridge structure is proposed with rectifier circuit at mid-point of the dc-link capacitor to keep constant CMV in the whole grid cycle namely M-HB topology. The theoretical findings of the M-HB inverter are tested through simulation results. At the end a fair comparative analysis is presented.

Keywords— Transformerless PV inverter, H-bridge inverter, stray capacitors, common-mode voltage and leakage current.

I. INTRODUCTION

In present market, photovoltaic (PV) energy is more favourable due to increased population and industries [1]- [2]. Recently, PV installations are incorporated with the grid connected systems due to its robustness, decreased cost and high in efficiency. In grid connected PV applications inverters are enormous role to convert the direct current (DC) to the alternating current (AC). Based on the operating principles, it can be classified into two types namely with transformer inverter and without transformer inverter or transformerless PV (TPV) inverters. Due to the demerits of with transformer such as an additional transformer is required for isolation purpose, which leads to increased size, weight, cost and poor efficiency [3]. Aforementioned issues can be overcome via TPV inverters but issues related with galvanic isolation are highlighted due to absence of the transformer between the PV to the grid [4].

In the literature, several topologies and corresponding control strategies have been introduced and published [5]-[7] to incorporate a super-junction metal-oxide-semiconductor field-effect transistors (SJ-MOSFETs) in TPV inverter design. The MOSFET solutions are extremely dominating in the present industry as compared with IGBT because the turn-off loss caused by tail current is mitigated. Here a few basic H4 based configurations are reviewed first to observe the

common-mode behaviour and leakage current performance in grid-tied applications. By placement of the decoupling switches into the basic H4 structure, SMA H5 topology becomes more popular in the market, as shown in Fig.1. (a). So that it can realized with three MOSFETs (S2, S4, S5) and two IGBTs (S1, S3) for high efficiency applications. The decoupling switch S5 is used to isolate the PV and the grid during freewheeling periods.

Another attractive structure for high efficiency application is Heric topology by sunways, as shown in Fig.1(b). It can be realized with four MOSFETs (S1-S4) and two IGBTs (S5, S6), which are placed on the grid side to provide the galvanic isolation during freewheeling periods. Another topology namely a hybrid-bridge (HB) [8] structure is realized with six MOSFETs and two diodes by using decoupling scheme, as shown in Fig.1. (c). However, the major issues in H5, Heric and HB structures are floating CMV and hence higher leakage current. It can be confirmed that only galvanic isolation is not able to eliminate the complete leakage current due to the effect of switches' junction capacitances and stray parameters.

Further, a neutral-point-clamped (NPC) structures are introduced to overcome the issues in decoupling topologies (H5, Heric and HB), namely H-bridge zero voltage rectifier (HBZVR), H-bridge zero voltage rectifier diode (HBZVR-D), as shown in Fig.1. (d) and Fig.1. (e). In HBZVR, the clamping branch is made with a rectifier bridge (S1-S4, D1-D4) including one additional diode (D5) at midpoint of the dc-link and hence oscillating CMV during the freewheeling periods. As a result, leakage current is not eliminated completely. Similarly, in HBZVR-D the structure is similar to HBZVR except in the clamping branch such as adding a one extra diode (D6) at midpoint of the dc-link and hence constant CMV with low leakage current.

An improved HB (I-HB) structure, which is similar to the HB except in clamping branch such as realized with two switches (S7, S8) at mid-point of the dc-link, as shown in Fig.1(f) [9]. Nonetheless, it has a higher switching count during the freewheeling periods and hence poor system efficiency. So, from the above discussions, it is revealed that, CMV clamping structures are more versatile and leading in the present market PV applications [10].

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Hardware Implementation and MATLAB Simulation of Automatic power factor correction

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Abstract: Power factor is one of the major important concerns in the field of power quality engineering. Power factor is a measure of how we are using our electric energy in more efficient way. Since it plays critical role on every electrical appliance, many researches are going on to improve power factor. Low power factor leads to high capital expenditures and operating cost for distribution utilities which in turn may impose penalty charges in the form of higher tariff charges on electric consumers. This paper presents the automatic power correction by installing real time hardware by automatically switching on the required capacitive banks on observing the phase difference between voltage and current and also comparing the results with MATLAB/SIMULINK.

Keywords: automatic Power factor correction, capacitive banks, choosing capacitor capacity.

1. INTRODUCTION:

In the field of power system engineering, it is mandatory requirement to have voltage regulation and power factor in permissible limits. Power factor is defined as the ratio of active power to the apparent power in any electrical installations. It is also defined as the phase difference between voltages and currents in ac systems which are expressed in the fig.1. It acts as one of the good indicators in the load current on the efficiency of the supply system.

Suppose, if a system is running with lower power factor, it draws heavy current than required normal current and causes voltage drops which results to the excessive heating of electric components over the system and thus causes damage to the equipment. The main cause of lower power factor is increase in power electronic loads, involvement of larger industries with growing demand.

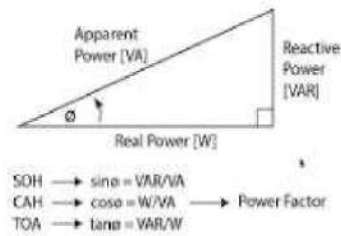


Fig.1 Power triangle

Improvement in power factor not only gives efficient power, but also decreases the cost and increase the durability of equipment. The benefits of improving power factor[1][2] are 1. Avoiding power factor penalties-As most of the industries use high capacity induction motors, conveyors and other machinery equipment. 2. Chance of getting low power bill-since distribution utilities are imposing penalties for recording lower power factor. 3. Increase in load carrying capabilities in electric circuits- as some loads are capable of drawing reactive power. 4. Improved voltage- by installing required capacitor banks across the loads improves power factor. 5. Reduced losses in power system.

2. POWER FACTOR CORRECTIONS

There are some standard techniques for improvement of power factor. Of course many techniques are published in various papers[3][4][5].

Static Capacitors- This method is mostly used in factories by connecting capacitors in parallel with the equipment operating at lagging power factor. The static capacitor draws a leading current or neutralizes the lagging reactive component produced by the

Present Day Lithium Ion Battery

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Abstract—Lithium-ion battery is potentially to be adopted as energy storage system for green technology applications due to its high-power density and high energy density. An accurate battery model in simulation platform is very important to design an efficient battery-powered system. In this paper, an electrical battery model is developed in MATLAB/Simulink.
Keywords—Li-ion Battery, BMS, SOC, Matlab/Simulink

I. INTRODUCTION

A battery is a device that converts the chemical energy into electrical energy by means of an electrochemical reaction called oxidation - reduction (redox). Each oxidation and reduction reactions are associated with the standard cell potential E^0 , which can be calculated from the thermodynamic information as follows,

$$E^0 = (-\Delta G) / zF$$

Where, ΔG standard Gibbs free energy, z - number of electrons exchanged and F - faraday constant. The overall theoretical cell voltage ΔE^0 is obtained by subtracting the negative electrode potential $E^{0(-)}$ from the positive electrode potential, $E^{0(+)}$.

$$\Delta E^0 = E^{0(+)} - E^{0(-)}$$

Although the term "Battery" often used, the basic unit is called electrochemical cell. Batteries are one of the earliest technologies in the field of energy storage. A battery consists of several cells which is called electrochemical cells. A battery consists of anode, cathode and electrolyte. The process consists of flowing of electrons from cathode to anode and ions from anode to cathode across the cell through the electrolyte. A battery may contain "n" number of cells. The storage capacity of battery is expressed in Ampere hours (Ah).

The important parameters of batteries are state of charge (S.o.C), state of discharge (S.o.D), Voltage, Current, Power density, Energy Density etc. The capacity of a battery is expressed as

$$Q = I \cdot t \quad (1)$$

Where I = Current and t = time of charge /discharge.

TABLE I. COMPARISON OF Pb-ACID, Ni-MH AND LI-ION PERFORMANCE:

	Pb-acid	Ni-MH	Li-ion
Theoretical			
Voltage (v)	1.93	1.35	4.1
Specific Energy (Wh/Kg)	166	240	410
Practical			
Specific Energy (Wh/Kg)	35	75	150
Energy Density (Wh/L)	70	240	400
Coulometric efficiency	0.80	0.65-0.70	>0.85
Energy efficiency	0.65-0.70	0.55-0.65	~0.80
Power density (W/L)	450	>300	>800

In recent years, the rechargeable battery market further expanded and tends to increase continuously. The worldwide sales for Li ion portable batteries is 63% and it is larger than those of Ni-Cd (23%) and Ni-MH (14%), which indicates that lithium battery technology receives most attention. Ever growing demand for batteries lead the industry and government liberally invest in battery research and development. The investment of industry is focused on improving battery technology for communication, mobile electronics and computer technology, whereas majority of government funded research is for military, spacecraft, transportation, etc. Requirement for improving the battery properties included cyclability, reversibility, high energy, power density, safety, environmental impact, lower cost, etc. Hence, a wide range of materials (anodes, cathodes and electrolytes) have been developed and investigated for the improved lithium battery technology.

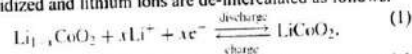
II. LITHIUM BATTERIES

Lithium is the lightest of metals and it floats on water. It also has the greatest electrochemical potential which makes it one of the most reactive of metals. These properties give Lithium the potential to achieve very high energy and power densities permitting batteries with very long useful life and small cell packages.

Li-ion batteries are commanding a greater market share owing to their high energy density, which makes them attractive for applications where weight or volume are important (e.g., HEVs). They have a long cycle life (>500 cycles) and low self-discharge rate (<10% per month). High initial cost has limited their use in price-sensitive applications, but new chemistries and economies of scale promise to reduce the cost of Li-ion batteries in the future.

Fig 1 shows a schematic diagram of an Li-ion cell. A lithium metal oxide ($LiMO_2$), where M stands for a metal such as Co , and lithiated carbon (Li_xC) are the active materials in the positive and negative electrodes, respectively. The metal in the positive electrode is a transition metal, typically Co . The active materials are bonded to metal-foil current collectors at both ends of the cell and electrically isolated by a microporous polymer separator film or gel-polymer. Liquid or gel-polymer electrolytes enable lithium ions (Li^+) to diffuse between the positive and negative electrodes. The lithium ions insert into or de insert from the active materials via an intercalation process.

In the positive electrode during charge, the active material is oxidized and lithium ions are de-intercalated as follows:



In the negative electrode during charge, the active material is reduced and lithium ions that migrate from the positive electrode and through the electrolyte and separator are intercalated in the reaction

Control of Two Level Converter based STATCOM with Battery and Ultracapacitor

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Abstract — Integration of renewable energy based Distributed Generation (DG) units into the Electrical Distribution Network (EDN) has attained significant interest to utilize the locally available resources. But, these DGs injects fluctuating power into the network which affects the voltage/frequency instability of the EDN. Thus, an energy storage system and reactive power compensating devices has to be employed in the EDN, to improve the voltage/frequency stability. A configuration for E-STATCOM has been presented in this paper, which has the ability to provide active and reactive power support together. The E-STATCOM is formed by distributing Hybrid Storage System (HSS) into a two-level Voltage Source Converter. To meet the high energy/power density requirements, battery and ultracapacitor have been employed as HSS. The issues related to integration of HSS with the two-level converter and the control methods to extract E-STATCOM features like active power support, voltage regulation are discussed in this paper. A super-twisting sliding mode control has been employed for the battery fed DC-DC converter to provide the required energy support. The performance of the proposed system and the associated control methods are verified through PSCAD/EMTDC simulation for a wind energy-based DG connected to EDN and the results show effectiveness of the E-STATCOM.

Keywords— Bi-directional DC-DC converter, Fractional order sliding mode control, Hybrid storage system, STATCOM, Ultracapacitor, Wind energy generation.

I. INTRODUCTION

The increase in demand for energy and reduction of fossil fuels necessitate the generation based on Renewable Energy Resources (RER). Also, it is serving as an effective solution to use the locally available resources to meet the energy demands. Among the different types of renewable energy resources, wind and solar energy based generations are increased at double fold rate due to high conversion efficiency, ease of operation and low installation cost, etc. However, these resources generate fluctuating power due to stochastic nature of solar insolation level and wind velocity. The voltage and frequency stability of the existing EDN are affected by injecting the variable power generated by the DGs. Hence, for the improvement of system stability, strict grid codes have to be followed [1]. The following list presents some of the requirements during integration of large renewable energy resources into the grid [2],

- Reactive power support
- Harmonic filtering

- Active power smoothening
- Unbalance mitigation

To integrate the DG into the electrical distribution network, an interfacing converter is employed. They injects variable power into the grid due to MPPT operation. Due to limitation in their ratings, these converters are unable to provide the required grid codes at common coupling point. So, they are dedicated for active power injection only. Thus, to provide the above listed features, ancillary systems are to be employed [3]. The features, like reactive power support, harmonic filtering, etc. can be provided by a STATCOM [4]. An Energy Storage System (ESS) is also to be employed for active power support [5]. The use of two different systems (i.e. ESS and STATCOM) results in reduction of overall efficiency. At the Point of Common Coupling (PCC), an 'E-STATCOM' can be connected to supply the required grid codes [6].

An E-STATCOM can be formed by connecting an ESS with STATCOM, which has the capability to support active power for definite duration and also caters the power quality issues. In [7], the battery-based storage system is employed to smoothen the power generated by a Wind Energy Generation System (WEGS). The battery storage system is lumped at the dc-link of two-level converter and the systems supplies only active power at the PCC. Ultracapacitor based storage system to smoothen the wind power has been studied in [8]. Apart from the control of storage system in E-STATCOM, the most desirable features of an ESS are to support loads with high energy/power density. Also, they should have the other qualities like high operation efficiency, longer life span, low installation cost and less maintenance. Among the available storage systems like batteries, ultracapacitor (UC), pumped storage, flywheels, etc. [9], none of them alone is capable to deliver the features as state above. So, it is effective to combine two/more types of energy storage system to obtain the desired features. This kind of storage system is termed as HSS [10]. One such combinations of HSS is battery and UC. The performance of battery and UC based HSS for active power support in electric vehicles has been studied in [11]. The same configuration has been employed to improve the frequency regulation of a stand-alone microgrid, and its performance has been presented in [12].

Hybrid Flying Squirrel Search Algorithm for solving the single objective optimization power flow problem in power system

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85. HYBRID FLYING SQUIRREL SEARCH ALGORITHM FOR SOLVING THE SINGLE OBJECTIVES OPTIMAL POWER FLOW PROBLEM IN POWER SYSTEM

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In this paper, a novel and recently developed algorithm which is inspired by natural foraging phenomenon of the flying squirrel named as Squirrel Search Algorithm is used and it is hybridized with arithmetic crossover operation to enhance its effectiveness and being used for solving the single objectives optimal power flow problem (OPF) of power system. So, the proposed algorithm is named as Hybrid Flying Squirrel Search Algorithm (HFSSA). The capability and performance of the proposed algorithm is observed on benchmark test functions and on IEEE-30 bus system. Generation fuel cost, emission and transmission losses are considered as objectives of optimal power flow problem. The obtained results will be compared with the existing literature to justify the supremacy of the proposed method.

Performance Enhancement of Isolated Forward Converter using PI Controller

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Abstract

Isolated Forward Converter is designed using standard topology, and commercially available application specific Integrated circuit. Methodology of choosing components, selection of values, design of magnetic like Inductors, Capacitors, and transformers has been expounded. The design is simulated on MATLAB software and tested. Mathematical Model for the above DC-DC converter is derived and a transfer function is obtained. The frequency response of the converter is plotted using MATLAB. Additional components for compensation based on frequency are also designed. The above design has been successfully tested on the hardware and waveforms at various points have been measured practically. **Keywords:** Forward Converter, PI Controller, TL3843.

I. Introduction

Modern electronic systems require high quality, small, light weight, reliable and efficient power supplies. Linear regulators can provide a very high quality output voltage. Their main area of applications is at low power levels as low drop-out voltage regulators. Electronic devices in linear regulators operate in their active (linear) mode. At high power levels switching regulators are used. Switching regulators use power electronic semiconductor switches in ON and OFF states. Since there is a small power loss in those states, switching regulators can achieve high energy conversion efficiencies. Modern power electronic switches can operate at higher frequencies resulting in smaller size of the transformer. A forward converter is discussed here as it is more energy efficient and used for higher power output applications ranging from 100W to 200W. The dc-dc converters can be classified into two categories:

- Isolated dc/dc converters
- Non-isolated dc/dc converters

A. Isolated Converters

This "isolation" refers to the existence of an electrical barrier between the input and output of the DC-DC converters. Isolation describes the electrical separation between the input and output of a dc-dc converter which uses a transformer to eliminate the dc path between its input and output and will have a high frequency transformer providing that barrier. This barrier can withstand anything from a few hundred volts to several thousand volts, as is required for medical application. A second advantage of an isolated converter is that the output can be configured to be either positive or negative.

B. Non-Isolated Converters

Non-isolated dc-dc converter has a dc path between its input and output. The non-isolated converter usually employs an inductor, and there is no dc voltage isolation between the input and the output. Battery-based systems that don't use the ac power line represent a major application for non-isolated dc-dc converters. For lower voltages (12V) non-isolated buck converters can be used. Non-isolated dc-dc converter designs usually employ ICs specifically intended for that purpose.

II. Isolated Forward Converter

In this the source ground and load ground are electrically separated but magnetically coupled then the circuit is said to be isolated one. The output voltage in forward converter depends on the duty ratio and also on the turn's ratio of the transformer.

Optimized Control Technique of Active Power Filter in 25KV Electric Traction System

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Abstract

AC railway traction systems undergoes to harmonic distortions due to unbalanced voltages and currents. These single-phase networks have CR-based electric locomotive drives which continually change their point of connection on the network. Active power filters are the only effective control strategy is to inject harmonic compensating currents derived from harmonic voltages measured at the point of common coupling. This paper shows how synchronously rotating frames helps us to extract individual harmonic voltages to act as current injection references. This paper discusses the evaluation of performance of control strategy using MATLAB/ Simulink.

Keywords-Active power filter, Harmonic voltages, Electric Locomotive Drive

1. Introduction

In industrial, commercial and residential applications, power electronic equipment's connected to the power systems, such as switched power supply, cycloconverters, inverters for driving AC motors, controlled and non-controlled rectifiers for driving DC motors, among are widely used.

AC electrified railway systems consist of a 25KV dedicated 1-phase supply network from which the locomotives draw power. In early days electric locomotives are driven by DC motors which requires a thyristor-based rectifier converters to provide voltage control. These types of locomotives, which are still in service not only draw a significant amount of lagging current at the fundamental frequency but also inject severe levels of harmonic current. The currents generated by these nonlinear loads can degrade the

power quality (PQ) in the electrical power systems by distorting utility of voltage. The harmonic currents injected by electric locomotives can result in a range of traction system problems, including trackside over-voltages, increased voltage form factor and excessive low order harmonic currents being fed back into the HV supply. Figure. 1 illustrates the pantograph voltage waveform obtained at the end of a 35km feeder section loaded with four 2.5MW locomotives operating at full power. The voltage waveform shows a resonant over-voltage and an increased voltage form factor.

The increasing of non-linear loads makes the use of active power filters an interesting way to eliminate harmonic currents as well as reactive power compensation. The harmonic currents injected by electric locomotives can result in a range of traction system problems, including trackside over-voltages, increased voltage form factor and excessive low order harmonic currents being fed back into the HV supply. Figure. 1 illustrates the pantograph voltage waveform obtained at the end of a 35km feeder section loaded with four 2.5MW locomotives operating at full power. The voltage waveform shows a resonant over-voltage and an increased voltage form factor.

Resonant over-voltages may leads to failures of equipment connected to the system, while an increase in form factor means that the maximum power available to each locomotive is reduced. To reduce this voltage distortion, some form of filtering action is required. The topology proposed in this paper is to use a shunt active filter.

Geothermal Power Generation: Global Updates

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Abstract— The demand for electric power is increasing day-by-day with the population in the world. The supply of power is unable to meet the demands. So, in order to bridge the gap between supply and demand switching over to alternate sources of energy is inevitable, that too renewable. Geothermal energy is one of which the world can rely on. Geothermal is the natural heat of the earth and is derived from the decay of radioactive elements in the earth's crust and transferred to the subsurface by conduction and convection. This paper presents the global status of geothermal energy and contributions from various countries. This paper also emphasizes the merits of geothermal energy over other renewable, which generate electricity.

Keywords— Geothermal Power, Installed Capacity, Global

I. INTRODUCTION

The word 'geothermal' is derived from the Greek words 'thermal' which means heat and 'geo' which means earth. This energy comes from deep inside the earth where the earth's core is hotter than the sun's surface. Geothermal energy is generated in the earth's core almost 4000 miles underneath the earth's surface. It is called a renewable energy source, because the water is replenished by rainfall and the heat is continuously produced deep within the earth. The slow decay of radioactive particles in the earth's core produces geothermal energy. This process is natural in all rocks. Due to this process, very high temperatures are continuously produced inside the earth. Wells can be dug and hot water can be pumped to the surface. People around the world use available geothermal energy to maintain the temperatures inside the homes warm and to produce electricity. Geothermal electricity generation requires hot water or steam at high temperatures of the order (300°F to 700°F) range to be drawn from deep inside the earth. This requires deep well to be drilled which may act as a reservoir of energy.

The geothermal power plants all over the globe use the naturally available hot water and steam from the earth's interior to turn turbine generators for producing Electricity.

For centuries, geothermal springs have been utilized for bathing, heating and cooking. Only in the early 20th century, people started to consider geothermal energy as a practical source of energy with huge potential. Apart from heating, geothermal energy is now used to produce electricity. Some other applications include cooling buildings as well as for other industrial purposes like fruit and vegetable cultivation.

World energy demand increased by 2.1% in the year 2020 relative to 0.9% in the year 2019[1]. This rise is mainly supported by fossil fuels, but these fuels are depleting day-by-day. In addition to this, CO2 emissions are not contained which is resulting in Global Warming. Temperature increases with depth in the earth at an average of 25°C/km. If the average surface temperature is 20°C, the temperature at 3km depth would be in the order of 95°C. Among all the energy sources, geothermal energy presents one of the most eco-friendly and clean energies. This is due to its lowest emission of greenhouse gases and also because it is a cost-effective energy source with the potential to replace conventional fossils for electricity generation and heating [2]. Most of the world's energy potential of geothermal sources account for the deposits with a fluid temperature below 130°C [3]. Volcanoes, hot springs, geysers and fumaroles are some of the visible features of geothermal energy. The most active geothermal resources are usually found along major tectonic plate boundaries where earthquakes and volcanoes are concentrated. Most of the geothermal activity in the world occurs in an area called the Ring of Fire [4] as shown in Figure.2. This area borders the Pacific Ocean.

The sequence of steps involved in building a large geothermal power project is represented in the block diagram as shown in Figure.1.

There are three types of geothermal power plants: (i) dry steam power plants (ii) flash steam power plants and (iii) binary cycle power plants. Among all these types, flash steam power plants are widely used to generate geothermal fueled electric power.

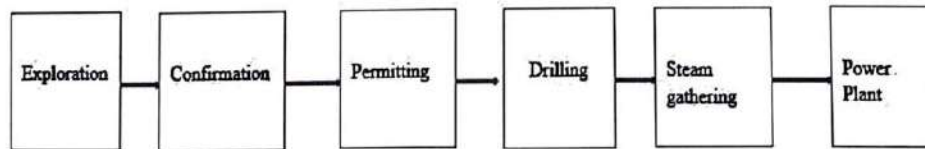


Figure 1. Block diagram representing various steps.



International Conference on Information, Communication and Computing Technology

ICICCT 2019: **Intelligent Computing Paradigm and Cutting-edge Technologies** pp 389–404

Compressed Sensing Based Mixed Noise Cancellation in Passive Bistatic Radar

[D. Venu](#)  & [N. V. Koteswara Rao](#)

Conference paper | [First Online: 18 January 2020](#)

481 Accesses

Part of the [Learning and Analytics in Intelligent Systems](#) book series (LAIS, volume 9)

Abstract

This paper proposes a unique compressed sensing based pathway to improve mixed noise cancellation in Passive Bistatic Radar (PBR). Mixed noise is considered as Additive White Gaussian Noise (AWGN) including Impulse Noise (IN). The proposed technique applies a best sparsifying basis that adapts to the structure of the problem and reduces the size of the measurement matrix drastically. According to simulation results, it has been confirmed that the proposed system gives higher state estimation

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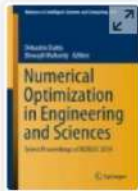
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Numerical Optimization in Engineering and Sciences pp 583–589

Predictive Data Optimization of Doppler Collision Events for NavIC System

[P. Sathish](#) & [D. Krishna Reddy](#)

Conference paper | [First Online: 08 April 2020](#)

442 Accesses

Part of the [Advances in Intelligent Systems and Computing](#) book series (AISC, volume 979)

Abstract

Navigation with Indian Constellation (NavIC) is satellite-based navigation system developed by Indian Space Research Organization (ISRO), India. It consists of seven satellites, among them, three are geostationary (GEO) satellites, and the rest are geosynchronous satellites. There are several factors that effect the positional accuracy of the NavIC system, and among them, one of the important parameter is Doppler collision (DC). The occurrence

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Jawad Mohiuddin Syed ; Dhana Lakshmi Namburi [All Authors](#)

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Abstract

Document Sections

I. Introduction

II. Methodology

III. Results and Discussion

IV. Conclusion

Authors

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Keywords

Metrics

Abstract:

To become one of the best countries in the world, India must have one of the best health services across the globe. The quality of health services of a country surely depends a lot on the doctors and facilities available but an important aspect which is not taken into consideration is the response time it takes for an ambulance to reach its patient. In this project, I aim to improve that response time by trying to eliminate the time wasted in traffic as much as we possibly can by placing cameras to detect an ambulance in range and then assist its passage smoothly out of the traffic jams. Detecting objects in images is quite trivial but to detect objects in a video is challenging. By applying this approach, we can hope to improve the health services of our country.

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“Preliminary Analysis of Doppler Collision Occurrence in Various Kinematic Conditions for NavIC System”

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S.No.6

2020 IEEE International Students' Conference on Electrical, Electronics and Computer Science

Preliminary Analysis of Doppler Collision Occurrence in Various Kinematic Conditions for NavIC System

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Abstract: India has designed its own regional navigational system, NavIC (Navigation with Indian Constellation) which is the operational name of Indian Regional Navigation Satellite System (IRNSS) developed by ISRO. It consists of seven satellites out of which four are geosynchronous and three are geostationary satellites. All the satellite based navigation systems are prone to errors induced by troposphere, ionosphere, difference in timing clocks used and relative motion between the satellites and user. One such phenomenon that introduces tracking errors due to geostationary satellites is 'Doppler Collision'. The impact of Doppler Collision (DC) is significant for precise user position estimation in static and various dynamic conditions. The aim of this paper is to analyze the Doppler Collision occurrence in kinematic conditions for various DLL (Delay Locked Loop) bandwidths. An efficient algorithm needs to be developed for the analysis of Doppler Collision in order to minimize the tracking errors. It is found that DC occurs for 33.4 minutes in 1C and 1G whereas 5.88 minutes in between 1C and 1F and for 6.416 minutes in between 1F and 1G satellites.

Keywords: Doppler Collision (DC), NavIC, dynamic conditions, geostationary satellites (GEO)

I. INTRODUCTION

Global Navigation Satellite System (GNSS) is a satellite based navigation system that estimates the position, velocity and timing of the user anywhere on the globe. This term is a combination of GPS, Galileo, GLONASS, Beidou, NavIC and other regional systems [1]. Indian Regional Navigation Satellite System (IRNSS) is an independently developed satnav system, designed controlled by the Indian Space Research Organization (ISRO). NavIC provides precise real-time positioning services covering India and extend upto 1,500 km around it. The system presently consists of a constellation of seven active satellites. Three of those seven satellites in constellation are geostationary satellites (GEO) and four are geosynchronous satellites (GSO) [2]. The main difference between GSO and GEO is in their inclinations with respect to the equator of the earth. Geosynchronous satellites will have more inclination where as geostationary satellites will have very less or no inclination at all with respect to the equatorial plane of the earth. An

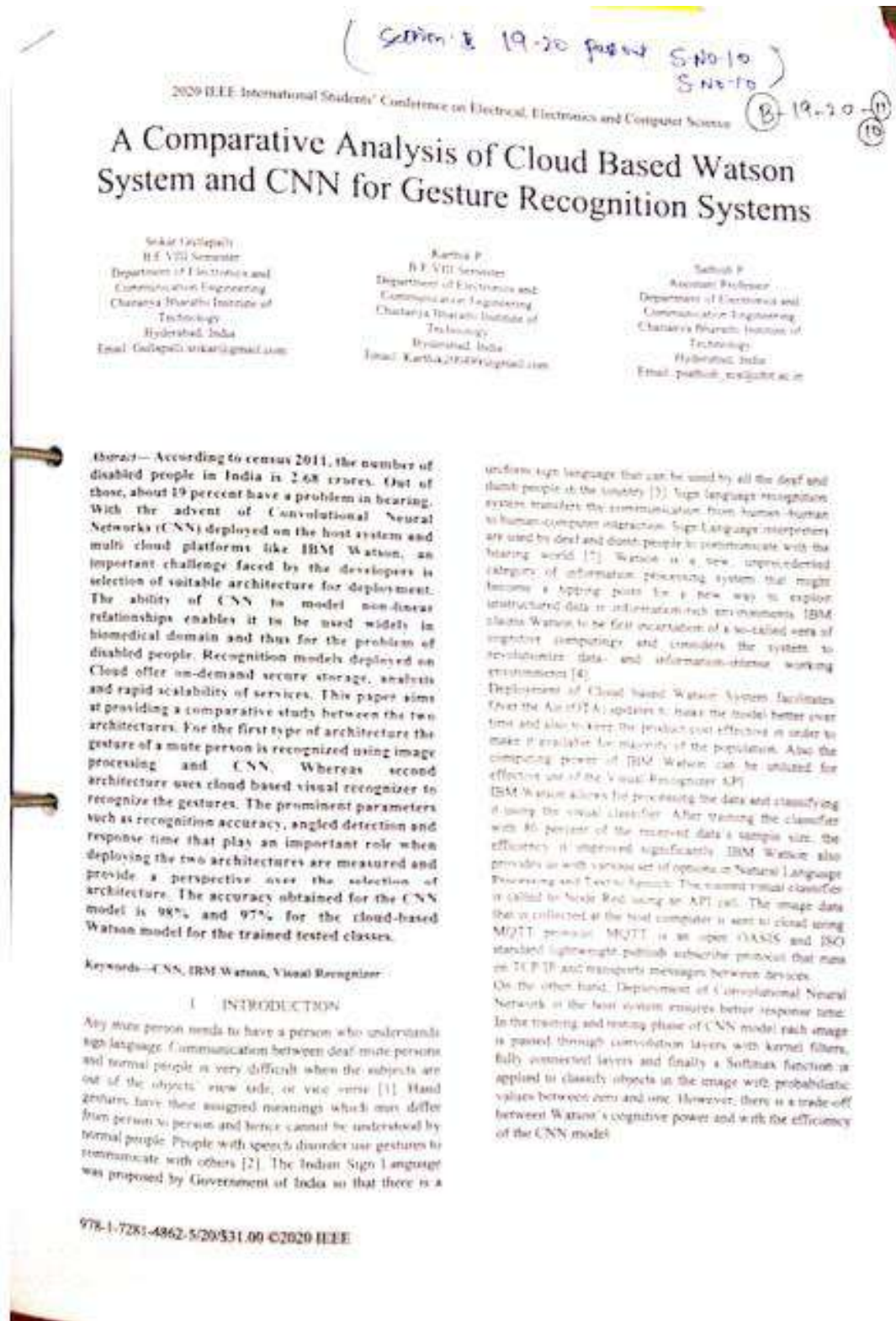
IGS (IRNSS GPS SBAS) receiver has been established in the NCRC laboratory, ECE department, CBIT, Gandipet, Hyderabad. The IGS receiver operates on two frequencies L5 (1176.45 MHz) & S1 (2492.028 MHz). The receiver also operates with GPS & SBAS (GAGAN) signals in L1 (1575.42 MHz).

One of the main errors to which all global and regional satellite systems are prone to is Doppler Collision. Doppler Collision is a phenomenon seen in code-division multiple access (CDMA) systems. The code measurement errors which are developed in GNSS as a result of cross correlation between two or more satellites is due to the occurrence of Doppler Collision. When the relative Doppler between two satellites is less than the receiver DLL bandwidth then Doppler Collision may occur. When the difference in distance between the auto correlation and cross correlation peaks is less than 24 dB, then the receiver cannot distinguish between them resulting in Doppler Collision [6]. Thus the receiver views one satellite to be another and tracking errors are caused. In NavIC geostationary satellites are used due to which Doppler Collision will happen twice a day and last several minutes and even more. The lower the relative doppler will be, the longer the interference will be significant and more will be the error in position [4]. The important parameters that contribute to Doppler Collision is Relative Doppler and the other parameters are Relative code delay, Signal power, Relative carrier phase, Cross Correlation function and Message data [8]. Occurrence of DC depends on the mentioned six parameters but the necessary condition for its occurrence will have to be the relative Doppler being less than the receiver code loop bandwidth. When the Doppler of two satellites are equal, it is possible to introduce a multipath-like error into the tracking of the correlation peak [9].

The receiver position is not significantly effected in low dynamic conditions because of less doppler shift. But in high dynamics, the receiver position is highly erroneous because the Doppler shift value changes rapidly. In high dynamic true receiver position can be found by controlling the performance parameters of the receiver. In low dynamics the typical Doppler range for standard GPS receiver is ± 7 KHz and in high dynamics, the variation of doppler frequency will be in the range of ± 100 KHz with a doppler rate of 1 Hz/s and 100 Hz/s respectively. Precise point positioning applications

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2020 IEEE International Students' Conference on Electrical, Electronics and Computer Science

A Comparative Analysis of Cloud Based Watson System and CNN for Gesture Recognition Systems

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Abstract—According to census 2011, the number of disabled people in India is 2.68 crores. Out of those, about 19 percent have a problem in hearing. With the advent of Convolutional Neural Networks (CNN) deployed on the host system and multi cloud platforms like IBM Watson, an important challenge faced by the developers is selection of suitable architecture for deployment. The ability of CNN to model non-linear relationships enables it to be used widely in biomedical domain and thus for the problem of disabled people. Recognition models deployed on Cloud offer on-demand secure storage, analysis and rapid scalability of services. This paper aims at providing a comparative study between the two architectures. For the first type of architecture the gesture of a mute person is recognized using image processing and CNN. Whereas second architecture uses cloud based visual recognizer to recognize the gestures. The prominent parameters such as recognition accuracy, angled detection and response time that play an important role when deploying the two architectures are measured and provide a perspective over the selection of architecture. The accuracy obtained for the CNN model is 98% and 97% for the cloud-based Watson model for the trained tested classes.

Keywords—CNN, IBM Watson, Visual Recognizer

I. INTRODUCTION

Any mute person needs to have a person who understands sign language. Communication between deaf/mute persons and normal people is very difficult when the subjects are out of the object's view side, or vice versa [1]. Hand gestures have these assigned meanings which may differ from person to person and hence cannot be understood by normal people. People with speech disorder use gestures to communicate with others [2]. The Indian Sign Language was proposed by Government of India so that there is a

uniform sign language that can be used by all the deaf and dumb people of the country [3]. Sign language recognition systems transfer the communication from human-human to human-computer interaction. Sign Language interpreters are used by deaf and dumb people to communicate with the hearing world [2]. Watson is a new, unprecedented category of information processing system that might become a stepping stone for a new way to exploit structured data in information-rich environments. IBM claims Watson to be full incarnation of a so-called era of intelligent computing and considers the system to revolutionize data- and information-intensive working environments [4].

Deployment of Cloud based Watson System facilitates Over the Air (OTA) updates, makes the model better over time and also to keep the product cost effective in order to make it available for majority of the population. Also the computing power of IBM Watson can be utilized for effective use of the Visual Recognizer API.

IBM Watson allows for processing the data and classifying it using the visual classifier. After training the classifier with 80 percent of the received data's sample size, the efficiency is improved significantly. IBM Watson also provides us with a broad set of options in Natural Language Processing and Text to Speech. The current visual classifier is called by Node Red using an API call. The image data that is collected at the host computer is sent to cloud using MQTT protocol. MQTT is an open OASIS and ISO standard lightweight publish-subscribe protocol that runs on TCP/IP and transports messages between devices.

On the other hand, Deployment of Convolutional Neural Network in the host system ensures better response time. In the training and testing phase of CNN model each image is passed through convolution layers with kernel filters, fully connected layers and finally a Softmax function is applied to classify objects in the image with probabilistic values between zero and one. However, there is a trade-off between Watson's cognitive power and with the efficiency of the CNN model.

Smart Farming System using IoT for Efficient Crop Growth

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Abstract— Smart agriculture is a farming system which uses IoT technology. This emerging system increases the quantity and quality of agricultural products. IoT devices provide information about nature of farming fields and then take action depending on the farmer input. In this paper, an IoT based advanced solution for monitoring the soil conditions and atmosphere for efficient crop growth is presented. The developed system is capable of monitoring temperature, humidity, soil moisture level using NodeMCU and several sensors connected to it. Also, a notification in the form of SMS will be sent to farmer's phone using Wi-Fi about environmental condition of the field.

Keywords—IoT, NodeMCU, agriculture, sensors

I. INTRODUCTION

Agriculture is the primary occupation in India and is the backbone of Indian economic system. Agriculture provides employment opportunities to rural people on a large scale in underdeveloped and developing countries in addition to providing food. It is the process of producing food, fiber and many other desired products by the cultivation and raising of domestic animals. Agriculture is the primary source of livelihood for about more than 58% of India's population.

Climate changes will have significant impact on agriculture by increasing water demand and limiting crop productivity in areas where irrigation is most needed. Irrigation system, rain fed agriculture, groundwater irrigation are some of the methods introduced to produce healthier crops which may not use water efficiently. In order to use water efficiently a smart system is designed. In the system farmer need not make the water flow into fields manually, but the system automatically does that efficiently.

The traditional methods practiced by people may result in huge wastage of water. Hence, the concept of robotized farming with mix of IoT has been developed [1]. The technological advancements began to increase the efficiency of production remarkably thus, making it a reliable system. The knowledge of properties of soil determines the water supply to be driven in a smart way. The practice of soil agriculture in a smart way helps to acquire knowledge of soil and temperature conditions. Developing the smart agriculture using IoT based systems not only increases the production but also avoids wastage of water [2]. The soil moisture sensor, humidity and temperature sensor continuously

monitors the soil and environmental conditions, sends the live data to smartphone via cloud service.

While raining, the moisture content may increase several times. A rain-drop detecting sensor informs the controller if there is rainfall, making the water supply to reduce or stop depending upon the moisture content at the moment. The crop requirements such as amount of humidity, temperature and moisture content are to be studied and can be installed again in the controller to meet its circumstances.

In this paper, the system uses few sensors which gives the amount of moisture in the soil, the humidity and temperature of the region, and a rain detecting sensor which and can be used in deciding whether the crop is suitable for growing. All these sensors along with NodeMCU are connected to the internet and a smartphone.

II. PROPOSED SMART FARMING SYSTEM

The system proposed uses a microcontroller (NodeMCU) which has a Wi-Fi module (ESP8266) over it. Smartphone with blynk is used as user interface. Soil moisture sensor, humidity and temperature sensor (DHT11) and rain detection sensors along with DC motor and deck robot are used. This DC motor is connected to a water pump which pumps water to the crops when the DC motor is ON. The soil moisture sensor senses the moisture level in the soil [3]. Depending on the level of moisture, NodeMCU decides whether to water the crop or not [4]. By using appropriate functions and conditional statements in the code written for the NodeMCU functioning, the watering of the crop starts by NodeMCU making DC motor ON when the moisture content is below a threshold value and is made OFF when there is enough moisture content in the soil. The humidity and temperature sensor gives the humidity and temperature values of the atmosphere which determine whether the crop is suitable for growth [5]. Some crops grow only in particular weather conditions and some give better yield only for a particular temperature range. The raindrop sensor measures the intensity of rain. If there is enough rainfall to provide soil with required water, the crops are not watered. Even after raining, if the crops are not having sufficient water then water is pumped again by making DC motor ON. Data reaches the blynk cloud from NodeMCU through Wi-Fi from Wi-Fi module present on NodeMCU [6]. The data then goes to blynk app in smartphone where the user can see the humidity, temperature, soil moisture levels and get the notifications if there is rainfall and if the DC motor is ON.

“Design and Simulation of FinFET based digital circuits for low power applications”

Conferences > 2020 IEEE International Students' Conference on Electrical, Electronics and Computer Science (SCEECS)

Design and Simulation of FinFET based digital circuits for low power applications

Publisher: IEEE

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S. Greeshma sai ; N. Ailvelu Manga ; P. Chandra Sekhar [All Authors](#)

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II. Finfet

III. Combinational circuits

IV. Johnson ring counter

V. Simulation results and discussion

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[Keywords](#)

Abstract:

The power and delay play a vital role in the design of integrated circuits(IC). Though, the scaling of transistors leads to reduction in size of IC, also results in short channel effects if the scaling is done beyond nanometer. These short channel effects make leakage power to increase and hence power. For reducing the short channel effects and to obtain low power dissipation, FinFETs are used. In this paper, an effort is made to design and simulate various digital logic circuits using FinFETs. For this, BSIM-CMG models of 22nm technology for FinFET are used and simulated in Cadence Virtuoso tool. Also, these circuits are compared in terms of power dissipation and delay with 45nm based digital logic circuits. From the results, it is observed that the power dissipation has reduced to a larger extent in 22nm FinFET technology when compared to 45nm CMOS technology.

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Conference Location: Bhopal, India

Detection of Multiple Closely Spaced Targets in Low SNR Conditions using MUSIC Algorithm

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Abstract: Radar is an electromagnetic system used for detecting, locating and tracking targets. To enhance the multi target detection capability of digital receivers in Electronic Warfare applications, high resolution algorithms are required. Multiple signal classification (MUSIC) is one of such prominent algorithm, but its performance is degraded in the presence of noise and when the targets are in close proximity. Therefore, in this paper MUSIC algorithm is modified at two stages. In the first stage Savitzky Golay filter is used as Pre-processing filter and at next stage noise removal technique is used for estimating the target eigenvalues and frequencies. The results showed that proposed algorithm is capable of distinguishing 3 targets with Signal to Noise Ratio (SNR) of upto -12 dB and 4 targets with SNR of -9dB with good range resolution compared to available literature. Optimized computation complexity of the proposed method is making it as superior compared to other methods.

Keywords—MUSIC; Savitzky Golay filter; Range resolution; Eigenvalue Decomposition; Spectrum estimation; Electronic Warfare.

I. INTRODUCTION

Today's electronic warfare scenario has become very complex and many users of radar are employing (Low Probability of Intercept) LPI as tactical requirement. In order to intercept and process the LPI signals, advanced signal processing techniques are required. LPI Radar plays a major role in the Electronic Warfare field [1]-[3]. It also determines the range, altitude, direction or speed of both stationary and moving objects such as aircrafts, ships and motor vehicles. High Resolution Range profile (HRRP) is one of the important features used in Automatic Target Recognition (ATR)[4]-[6]. FFT is the initial signal detection algorithm to identify the frequencies which are in fine range, but if the two input signals are close in frequency, it is difficult to separate them by using FFT. In that case, high resolution spectrum estimation techniques should be employed for that particular portion of data. Several types high resolution approaches such as Linear prediction, Prony's model, MUSIC and ESPRIT methods are used to estimate frequencies from input data[7]-[9]. To identify the correct frequencies using high resolution algorithms, the actual input should be processed. In linear prediction method (all-pole method) selection of correct filter order is the main issue. When the order of the filter is not proper, the spectrum does not produce the peaks at the input signal frequencies correctly. For digital receivers, it is very important to identify the number of target signals without

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- III. LDPC CODE
- IV. SIMULATION RESULTS
- V. CONCLUSIONS

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Abstract:

Multiple Input Multiple Output Orthogonal Frequency Division Multiplexing (MIMO OFDM) wireless communication is well known in the literature. However, the problems occur in classical MIMO system can be overcome with large number of array antennas such systems, termed as Massive MIMO. But, the latency may be more for these systems using traditional equalizers such as Zero Forcing (ZF) and Minimum Mean Square Error (MMSE). Hence, this paper proposes LDPC coded Massive MIMO OFDM system using Approximate Message Passing (AMP) equalizer. The performance of the proposed system is analysed through simulations. In this simulation, different transmit and receive antennas (64, 128), (64, 256), (64, 512) and (64, 1024) and 16QAM are used. Finally, the performance of LDPC coded and uncoded massive MIMO OFDM using AMP equalizer is analyzed in comparison with ZF and MMSE equalizers using BER and latency as performance measures.

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Turbo Code with Hybrid Interleaver in the Presence of Impulsive Noise

V. V. Satyanarayana Tallapragada , M. V. Nagabhushanam & G. V. Pradeep Kumar

Conference paper | [First Online: 02 August 2020](#)

732 Accesses | 2 Citations

Part of the [Advances in Intelligent Systems and Computing](#) book series (AISC, volume 1165)

Abstract

In this paper, a numerical density function of impulsive symmetric α -stable noise was presented and simulated in the turbo coding environment. The impulsive symmetric α -stable noise has no closed-form expression, making it difficult to realize in its original form. The impulsive symmetric α -stable noise can be used to approximate many kinds of noise sources when all the parameters of the function are well optimized to a specific value. In this paper, one of the parameters is set to a specific value so that the stable distribution approximates Cauchy distribution. Correspondingly, it is applied on turbo codes. In addition, an improved interleaver structure is presented where the multiple interleavers of smaller capacity replace a single epic interleaver. Simulation results show that the proposed hybrid interleaver

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Mixed image denoising using weighted coding and non-local similarity

V. V. Satyanarayana Tallapragada , N. Alivelu Manga, G. V. Pradeep Kumar & M. Venkata Naresh

SN Applied Sciences **2**, Article number: 997 (2020) | [Cite this article](#)

873 Accesses | **4** Citations | [Metrics](#)

Abstract

Denoising an image is a heuristic and objective process. Still, underlying noise that is predominant in the images reduces the quality. Additive white Gaussian noise (AWGN) and impulse noise are the most exploited types of noise. For a specified amount of density, a combination of AWGN and impulse noise may distract the entire signal causing a loss in the magnitude. This paper presents a denoising model by exploiting such a combination that uses an overcomplete dictionary by sparse based denoising scheme with suitable regularization terms. A weight matrix is defined to optimize the operation at specific locations of the image. Finally, the use of non-local similarity features improves the quality of reconstructed images. The weight matrix maps the regions where the effect of multiple noise sources is present. The results proved the superiority of the proposed technique. Simulation of the proposed technique on many images with different quantities of noise produced an improvement of up to 2 dB when the noise effect is more when compared to the state-of-the-art techniques.

Significance of festivals and understanding Cultural heritage

Nagadevi Darapureddy

Abstract

Festivals are impalpable cultural assets maintaining the past and passing them to the future generations. Festivals are eloquent to indicate culture, traditions, and heritage. Festivals are celebrated irrespective of caste and religion in the country. It creates relations and a strong bond in humanity. It builds social relations and social communication which leads to unity among the people. The present generation will come to know about our customs and old-age practices during these celebrations. Various festivals have religious inchoation and entwine cultural and religious paramountcy in traditional activities. Festivals can accommodate tourism advantages such as increased visitation and development of a destination's image. Communities experience arrange of benefits from festivals. These benefits include building social cohesion, providing a specific time and place for families and friends to show their commitments to the area, and to provide a socially acceptable area for publications. The main aim of this article is to represent the significance of festivals, the main festival which is celebrated grandly in every state