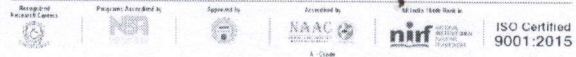


**CHAITANYA BHARATHI
INSTITUTE OF TECHNOLOGY (A)**

Kokapet(Village), Gandipet, Hyderabad, Telangana-500075. www.cbit.ac.in



COMMITTED TO
RESEARCH,
INNOVATION AND
EDUCATION

44
years

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

Index Page

S.No	Description	Page no.
1	2019 books and chapters in edited volumes/books published	2-77
2	2019 e-copies of books and chapters in edited volumes/books published	78-81

Principal

Chaitanya Bharathi Institute of Technology

(Autonomous)

Gandipet, Hyderabad-500 075.

A Survey on Emotion's Recognition Using Internet of Things

A Survey on Emotion's Recognition Using Internet of Things

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

Conference paper | [First Online: 05 November 2018](#)

665 Accesses

Part of the [Advances in Intelligent Systems and Computing](#) book series (AISC, volume 815)




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

Cite this paper

Sai Supriya, K.P.L., Ravinder Reddy, R., Rama Devi, Y. (2019). A Survey on Emotion's Recognition Using Internet of Things. In: Bapi, R., Rao, K., Prasad, M. (eds) First International Conference on Artificial Intelligence and Cognitive Computing . Advances in Intelligent Systems and Computing, vol 815. Springer, Singapore. https://doi.org/10.1007/978-981-13-1580-0_31

Download citation

[.RIS](#)  [.ENW](#)  [.BIB](#) 

DOI

https://doi.org/10.1007/978-981-13-1580-0_31

Published	Publisher Name	Print ISBN
05 November 2018	Springer, Singapore	978-981-13-1579-4

Online ISBN	eBook Packages
978-981-13-1580-0	Intelligent Technologies and Robotics
	Intelligent Technologies and Robotics (RO)

Voiceprint-Based Biometric Template Identifications



Chapter

Voiceprint-Based Biometric Template Identifications

By Akella Amarendra Babu, Sridevi Tumula, Yellasiri Ramadevi

Book [The Biometric Computing](#)


Edition	1st Edition
First Published	2019
Imprint	Chapman and Hall/CRC
Pages	18
eBook ISBN	9781351013437

ABSTRACT

Performance improvement of the speaker recognizers using the traditional methods like signal processing, has hit a dead end. Speech researchers are therefore now focusing on other techniques and processes to supplement the traditional methods to reduce the gap in communication interfaces between humans and machines. Voiceprint based biometric identifications is evolving as a new technique. Phonetic distance measurement is one such evolving technique and the cutting edge researchers are inspired to work on this technique to circumvent and overcome the above problem. This chapter covers a new speaker recognition model based on the pronunciation variability. The pronunciation variability is used to identify the voiceprint of the speakers. The Kullback-Leibler divergence relative entropy criterion is used for the speaker identification and verification. An adaptation model is designed for the unsupervised dynamic adaptation of the new pronunciation variants. The multi-layered code book memory using the modified vector quantization technique is designed to keep the word confusability low and ensures efficient retrieval of the pronunciation variants. The confusion matrix and performance metrics are used for performance evaluation of pronunciation classifier. The pronunciation classification error rate, OOV error rate and word error rate are used for evaluation.

A Proficient and Smart Electricity Billing Management System

A Proficient and Smart Electricity Billing Management System

[P. Pramod Kumar](#)  & [K. Sagar](#)

Conference paper | [First Online: 13 July 2019](#)

569 Accesses | 3 Citations

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




Abstract

Electricity is an energy that play a major role in human life. In day to day life, each and every device from machinery to wrist watch everything works on electricity. It is the most basic requirement next to food, shelter, and clothing. From the past decade's lot of changes took place in electricity departments but even now they are using manual billing system. This system has a wide range of disadvantages like malpractices are done while billing, escaping from punishment if any late payments, manpower for billing and collecting bills and wastage of paper billing. And moreover, if a fire accident or a technical problem arises the whole lane (transformer) will be terminated from power supply this may cause an inconvenience to the peer consumers too. Here, we are concerned about the economic loss that arises due to the manual billing system. In the manual billing system, every month end or for a couple of months bill is generated. An employee from the electricity department comes to each and every house for billing the meters based on the number of units the consumer has consumed.

How to Cite this paper

Pramod Kumar, P., Sagar, K. (2020). A Proficient and Smart Electricity Billing Management System. In: Satapathy, S.C., Raju, K.S., Shyamala, K., Krishna, D.R., Favorskaya, M.N. (eds) *Advances in Decision Sciences, Image Processing, Security and Computer Vision. Learning and Analytics in Intelligent Systems*, vol 3. Springer, Cham. https://doi.org/10.1007/978-3-030-24322-7_20

Download citation

[.RIS](#)  [.ENW](#)  [.BIB](#) 

DOI

https://doi.org/10.1007/978-3-030-24322-7_20

Published
13 July 2019

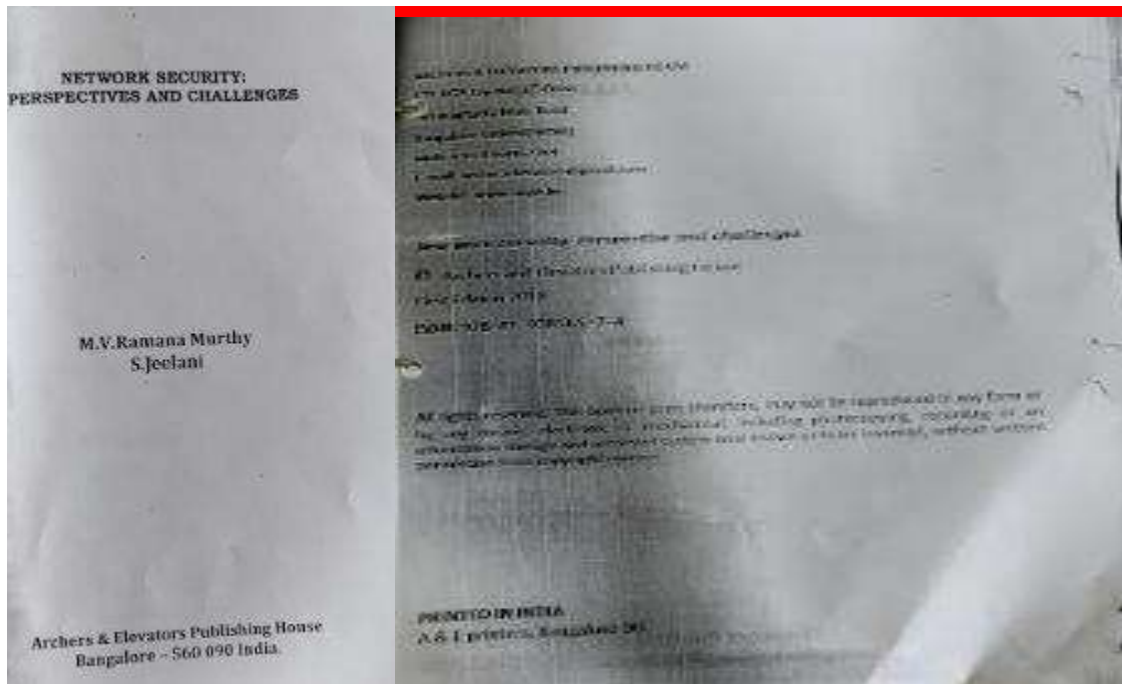
Publisher Name
Springer, Cham

Print ISBN
978-3-030-24321-0

Online ISBN
978-3-030-24322-7

eBook Packages
[Intelligent Technologies and Robotics](#)
[Intelligent Technologies and Robotics \(RO\)](#)

Network Security: Perspectives and Challenges



Detection of Natural Features and Objects in Satellite Images by Semantic Segmentation Using Neural Networks

Detection of Natural Features and Objects in Satellite Images by Semantic Segmentation Using Neural Networks

[Vihar Kurama](#), [Samhita Alla](#) & [Sridevi Tumula](#) 

Chapter | [First Online: 14 November 2019](#)

1137 Accesses

Part of the [Remote Sensing and Digital Image Processing](#) book series (RDIP, volume 24)




Abstract

In recent years, Neural Networks have become one of the most research focused areas of Artificial Intelligence. From detecting objects in real time to the classification of images, these Neural Networks are efficient and are achieving maximum possible accuracies based on the given inputs. In this work, we use Neural Networks for detecting features in satellite images. Using image segmentation and object detection techniques, we find objects, like roads, buildings, trees, and other resources, in the satellite images. In this work, Neural Network architecture used for segmentation of the images is ConvNet also called Convolutional Neural Network. U-Net which has a convolutional autoencoder architecture maps the layers to find the features and resources in the given satellite images. U-Nets do per-pixel semantic alignment for finding objects and features which result in segregation of resources. By using

Cite this chapter

Kurama, V., Alla, S., Tumula, S. (2020). Detection of Natural Features and Objects in Satellite Images by Semantic Segmentation Using Neural Networks. In: Hemanth, D. (eds) Artificial Intelligence Techniques for Satellite Image Analysis. Remote Sensing and Digital Image Processing, vol 24. Springer, Cham. https://doi.org/10.1007/978-3-030-24178-0_8

Download citation

[.RIS](#)  [.ENW](#)  [.BIB](#) 

DOI

https://doi.org/10.1007/978-3-030-24178-0_8

Published
14 November 2019

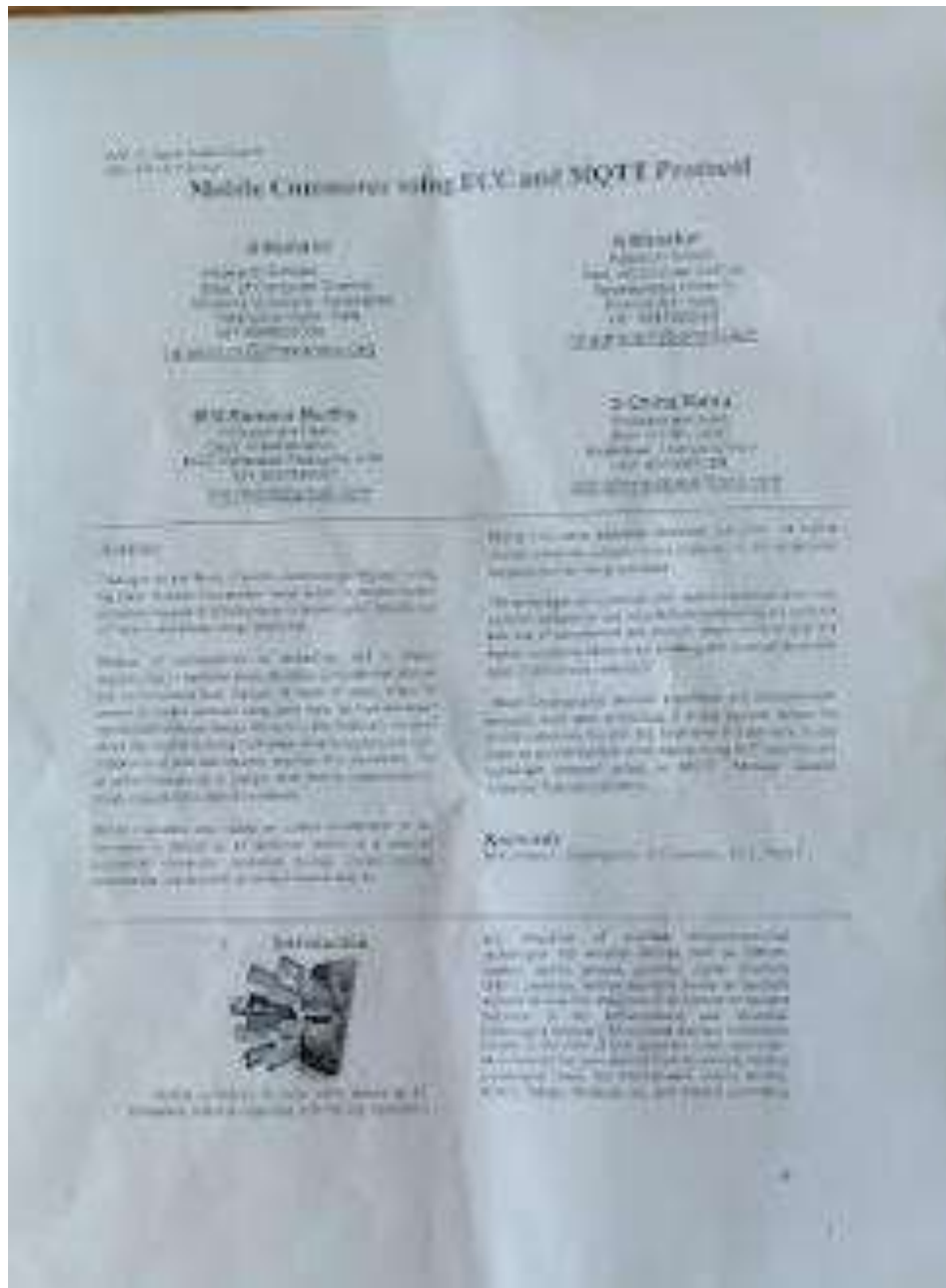
Publisher Name
Springer, Cham

Print ISBN
978-3-030-24177-3

Online ISBN
978-3-030-24178-0

eBook Packages
[Earth and Environmental Science](#)
[Earth and Environmental Science \(R0\)](#)

Mobile Commerce using ECC and MQTT Protocol



DETECTING FRAUD IN CYBER BANKING USING FEATURE SELECTION AND GENETIC ALGORITHM

¹G. Kavita,²CH. VijayaLaxmi, ³D.Avanthika Shree , ⁴Kavya Thall
¹Asst prof, CBIT,²Asst prof, CBIT, ³4th year 2nd sem CBIT. ⁴4th year 2nd sem CBIT.
¹CSE Department,CBIT, Hyderabad, INDIA

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.

1. 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 "whenever 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 pretenses," 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.



Applications of IoT for Soil Quality

K. Spandana^{1(S*)} and Suresh Pabboju²

¹ Department of CSE, CBIT, Gandipet, Hyderabad, India
kspandana_cse@cbit.ac.in

² Department of IT, CBIT, Gandipet, Hyderabad, India

Abstract. The farming industry has become more important than ever before in the next few decades. Farmers and agricultural companies are turning to the Internet of Things (IoT) to meet demand. Since we need to continuously take measures manually it requires large amount of time. So using this Smart Agriculture we can effectively take the measurements in less amount of time. In this Smart Agriculture sensors can provide continuous measurements with respect to climate changes. Using Internet of things we can produce different ways to cultivate soil. Smart Agriculture and Smart Farming applications will help the farmer with 24/7 visibility into soil, crop health, and energy consumption level. This paper presents how to analyze soil moisture levels, soil type and soil quality according to the water and climate change. By considering all this factors, farmers can decide which type of crop is suitable for the particular soil to get profit instead of using traditional lengthy methods, and how much fertilizers have to use according to nutrients level in soil.

Keywords: IoT · NodeMCU · Smart agriculture

1 Introduction

Our country produce crop production with the foremost food staples. The farming industry is going to become very important in upcoming years. According to the UN Food and Agriculture Organization the world has to produce 70% more food in 2050 than 2006 [14]. In India agriculture system the continuous assessment for soil quality, type, evapotranspiration, and moisture levels are not done. Farmers need to take help of the soil department to know about features of soil [17, 18]. IoT is one of the technology which can provide a solution for this problem, which aims to extend system with more features. This paper presents to monitor soil moistures and consider different sensors to collect the data. Sensors are to be connected to the device through WiFi module and data which is retrieved from the sensor can be stored in the server or cloud. Later on the sensor data, data analysis has to be performed. From this analysis farmer can decide which crop can be choose according to the soil and climate change.

1. **Feasibility of Soft Real-Time Operations Over WLAN Infrastructure-Independent IoT Implementation by Enhancing Edge Computing**

 SpringerLink



[Data Engineering and Communication Technology](#) pp 223–230 | [Cite as](#)

Feasibility of Soft Real-Time Operations Over WLAN Infrastructure-Independent IoT Implementation by Enhancing Edge Computing

[Sujanavan Tiruvayjpati](#)  & [Ramadevi Yellasiiri](#)

Conference paper | [First Online: 09 January 2020](#)

653 Accesses | 1 Citations

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

Abstract

The subsequent generation of IoT devices must work on a multi-protocol architecture to facilitate M2M communication along with endpoint user interfacing to solve the network infrastructure dependencies accompanied by redundant data flow overhead. An ideological solution is proposed to facilitate a change while cutting down infrastructure cost and enhancing the current setups through proper implementation of edge computation. End devices cooperate with each other along with providing GUI and Internet to handsets; monitoring sensor information as well as issuing control signals.



Cite this paper

Tiruvayipati, S., Yellasiri, R. (2020). Feasibility of Soft Real-Time Operations Over WLAN Infrastructure-Independent IoT Implementation by Enhancing Edge Computing. In: Raju, K., Senkerik, R., Lanka, S., Rajagopal, V. (eds) Data Engineering and Communication Technology. Advances in Intelligent Systems and Computing, vol 1079. Springer, Singapore. https://doi.org/10.1007/978-981-15-1097-7_19

Download citation

[.RIS](#) [.ENW](#) [.BIB](#)

DOI

https://doi.org/10.1007/978-981-15-1097-7_19

Published	Publisher Name	Print ISBN
09 January 2020	Springer, Singapore	978-981-15-1096-0

Online ISBN	eBook Packages
978-981-15-1097-7	Intelligent Technologies and Robotics
	Intelligent Technologies and Robotics (RO)

2. **Viability of uncomplicated IoT SaaS Development for Deployment of DIY applications over HTTP with Zero Investment**



Viability of an Uncomplicated IoT SaaS Development for Deployment of DIY Applications Over HTTP with Zero Investment

[Sujanavan Tiruvayjpati](#)[✉] & [Ramadevi Yellasi](#)

Conference paper | [First Online: 13 July 2019](#)

580 Accesses

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

Abstract

IoT administrations are ordinarily conveyed of IoT as physically disconnected vertical arrangements, in which all framework segments running from tangible gadgets to applications are firmly coupled for the prerequisites of each explicit venture. The productivity and versatility of such administration conveyance are naturally constrained, presenting noteworthy difficulties to IoT arrangement developers. In this context, we propose a novel SaaS structure that gives basic stage administrations to IoT arrangement suppliers to productively convey and constantly expand their administrations for DIY applications over HTTP with no investment required. This paper initially presents the IoT SaaS engineering, on which IoT arrangements can be conveyed as virtual verticals by utilizing figuring assets and middleware benefits on free cloud services. At that point we present the itemized instrument, usage of area intervention, which helps arrangement suppliers to productively give area explicit control applications by designing their own SaaS for IoT. The proposed methodologies are exhibited through the implementation of a sample experiment for building the need. A prototype proposed method is discussed in this paper.



Cite this paper

Tiruvayipati, S., Yellarsi, R. (2020). Viability of an Uncomplicated IoT SaaS Development for Deployment of DIY Applications Over HTTP with Zero Investment. In: Satapathy, S.C., Raja, K.S., Shyamala, K., Krishna, D.R., Favorskaya, M.N. (eds) *Advances in Decision Sciences, Image Processing, Security and Computer Vision, Learning and Analytics in Intelligent Systems*, vol 3. Springer, Cham. https://doi.org/10.1007/978-3-030-24322-7_27

Download citation

[RIS*](#) [ENW*](#) [BIB*](#)

DOI

https://doi.org/10.1007/978-3-030-24322-7_27

Published	Publisher Name	Print ISBN
13 July 2019	Springer, Cham	978-3-030-24321-0

Online ISBN	eBook Packages
978-3-030-24322-7	Intelligent Technologies and Robotics
	Intelligent Technologies and Robotics (RO)



**MF-104: USE OF RECYCLED CONCRETE AGGREGATE IN SELF COMPACTING
CONCRETE: A NEED FOR SUSTAINABLE DEVELOPMENT**

SrinivasVasam^a, K. JagannadhaRao^b, M.V.SeshagiriRao^c

^a Siddhartha Institute of Technology & Sciences, Hyderabad, India

^b Dept. of Civil Engg. Chitanya Bharathi Institute of Technology, Hyderabad, India

^c Dept. of Civil Engg., JNTUH CE Hyderabad, India

*Corresponding author: nivas.vasam@gmail.com

ABSTRACT

Construction has a major share in developing infrastructure in any Country. Accordingly, in the next five years, infrastructure in India will need a huge expenditure. 'Recycled' concrete aggregate could be a reliable alternative to using natural aggregates in concrete construction which unfortunately is not put to re-use. Dumping of wastes on land is not only causing shortage of space, but also environmental problems in cities. Further, due to urbanization, distance between demolition waste generation area and disposal land area has also become longer and therefore, transportation cost for disposal has increased and thus resulted in the excessive use of energy. Recycling of demolished waste can offer not only the solution of growing waste disposal problem, but will also help to conserve natural resources for meeting increasing demand of aggregates for long time to come for construction industry leading to sustainable development.

This paper describes the outcome of tests carried out about the use of Recycled Concrete Aggregate in Self Compacting Concrete (RASCC). Recycled aggregates used in this study were generated by crushing of construction and demolition waste (CDW). Seven different grades of concrete mixes (M20 to M70) were produced with five recycled aggregate contents (0%, 25% 50%, 75% and 100%). Compressive strength, split tensile strength and flexural strength of the concrete were determined. It was observed that there was no significant variation in compressive strength, split tensile strength and flexural strength of concrete. The findings from the study show that the recycled concrete aggregate may be useful for construction industry as an alternative construction material to natural aggregates.

Keywords: *Recycled concrete aggregate, Construction and Demolition Waste (CDW), Recycled Aggregate Self Compacting Concrete (RASCC), Sustainable Environment.*

An Analytical Approach on Effective Selection of Sustainable Materials in Construction Industry by Environmental Management Systems (EMS) & Green Supply Chain Management

Proceeding Abstract Book of National Symposium on Sustainable Waste Management (NSSWM-2019)
20th April, 2019

An Analytical Approach on Effective Selection of Sustainable Materials in Construction Industry by Environmental Management System (EMS) & Green Supply Chain Management

Srinivas Vasam^{1*}, Dr.K. Jagannadha Rao², Dr. M.V.Seshagiri Rao³, Vasu Kathi⁴

¹Department of Civil Engineering, Jawaharlal Nehru Technological University Hyderabad, India

²Department of Civil Engineering, Chitanya Bharathi Institute of Technology, Hyderabad, India

³Department of Civil Engineering, Jawaharlal Nehru Technological University Hyderabad, India

⁴NCC International, Hyderabad, India

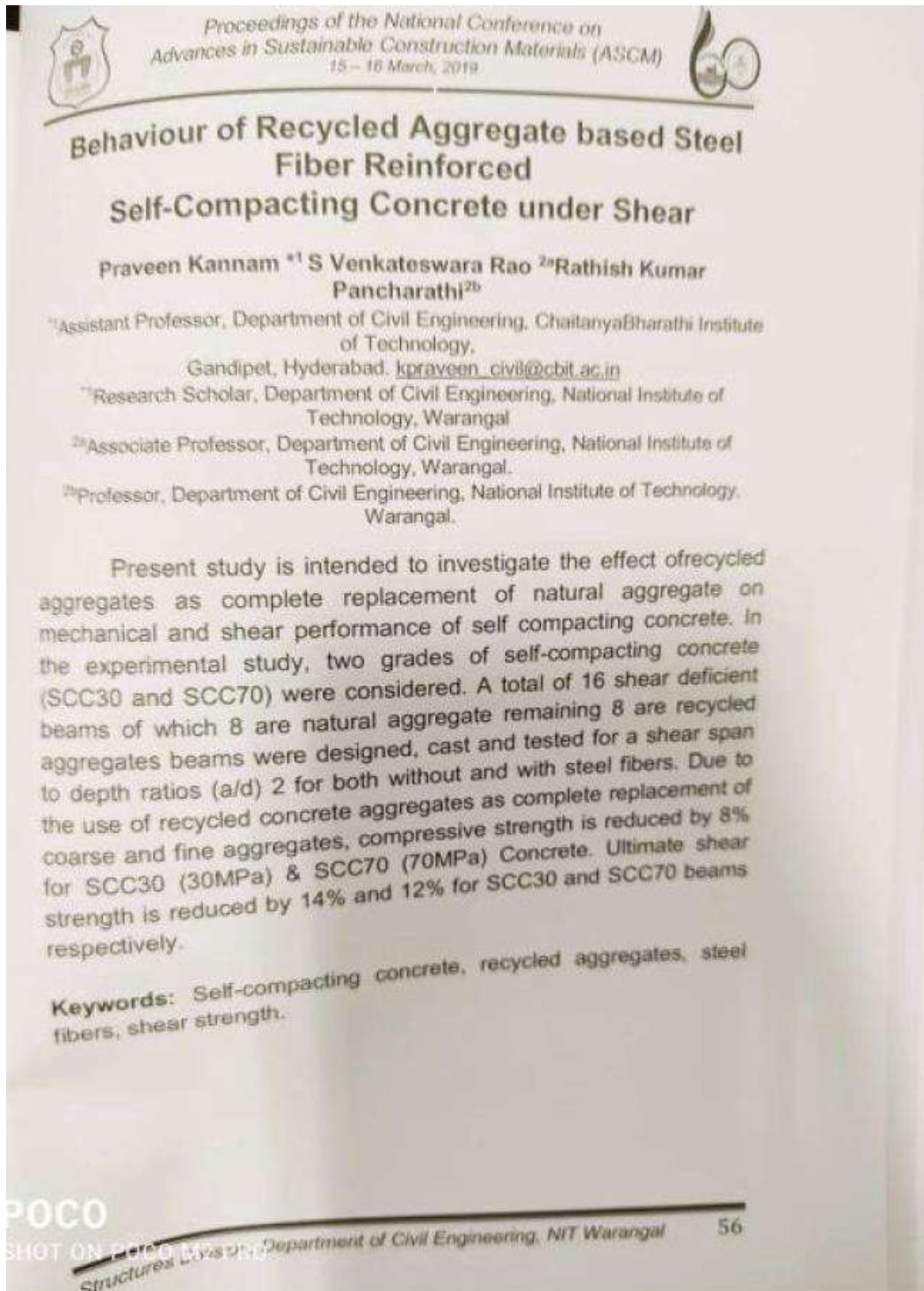
*E-mail: vasamsrivas@gmail.com

Abstract

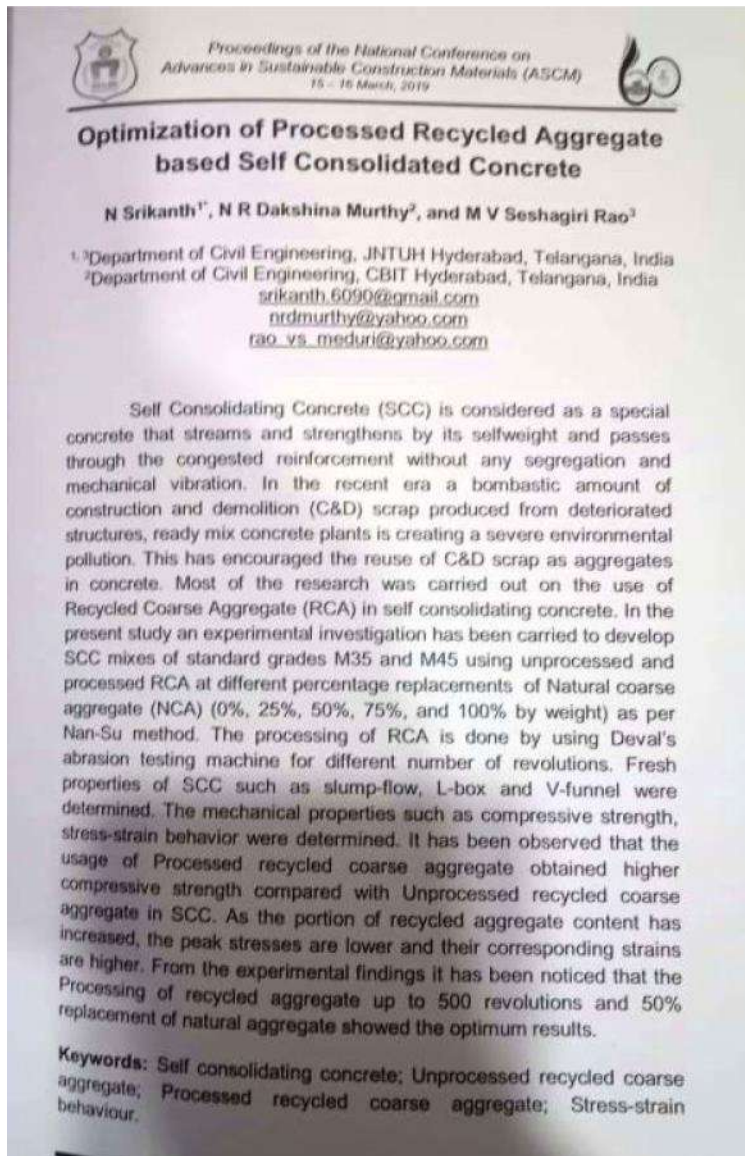
For the construction industry the 'sustainability' has become a common word and is also a mandatory concept that is being persisted by the client in the contract itself such has become its importance. The construction industry which has been the predominant contributor for the environmental pollution has been trying to march towards reduction of CO₂ foot prints by making use of sustainable materials.

In this paper, a critical literature review has been conducted about the sustainability and its concepts in a detailed manner. Further review has also been conducted on the possible new sustainable materials which might yield better results in reduction of CO₂ emission and shall sustain though the life span of the project in an effective and efficient manner. Under pinning the fact that selection of these sustainable materials for different construction projects has become a major concern in present construction industry. This paper shall discuss on possible effective methods for identification of suitable sustainable materials for the projects by environmental management system and green supply chain management. From this paper it can be understood that construction industry is slowly marching towards usage of eco-friendly materials and more importantly trying to implement an effective environmental materials selection system such as adoption of green supply chain management thereby which striving towards reduction of CO₂ emission in projects.

Keywords: Environmental management system, Green supply chain, Supply chain management



Optimization of Processed Recycled Aggregate based Self Consolidated Concrete



FLEXURAL AND SHEAR BEHAVIOR OF HIGH STRENGTH POND ASH CONCRETE

V BHIKSHMA¹ M.KOTI REDDY² T.SRIKANTH REDDY³

¹Professor, Department of Civil Engineering, University College of Engineering (A) Osmania University, Hyderabad, Telangana State, India, v.bhikshma@yahoo.co.in

²Professor Chaitanya Bharathi Institute of Technology, Gandipet, Hyderabad, India

³Research Scholars, Department of Civil Engineering, UCE(A) Osmania University, Hyd, Telangana State, India

Abstract: Concrete is most widely used construction material. Traditionally concrete is made up of cement, river sand as fine aggregate, crushed stone aggregate as coarse aggregate and potable water. Nowadays, river sand is not readily available for use in many places. Instead of natural river sand, crusher sand or manufactured sand obtained from stone aggregate quarries is widely used as fine aggregate in concrete. The main objective of this study was to identify alternative source of good quality fine aggregates which is depleting very fast due to the fast pace of construction activities in India. In the present study the experimental investigations carried out to evaluate the effects of replacing the pond ash with river sand use of super plasticizer, on various concrete properties. Use of pond ash is a waste industrial by-product of power plants provides great opportunity to utilize it as an alternative to normally available aggregates. It is found that as the percentage of Pond ash increases from 10% to 15% the strength of the pond ash concrete increases but the results are lower than the target mean strength of the respective M50 and M60 grades of concrete. Hence in the present work 20% replacement of sand by pond ash is considered and the target mean strength values are obtained. The target mean strength of (M50, 66 N/mm² and M60, 69 N/mm²) pond ash replacement was considered to cast the cubes, cylinders and prisms reinforced concrete beams. The Flexural Behaviour of RC beams shows that the ultimate load carrying capacity and shear capacity of concrete. The 28days characteristic compressive strength of M50 and M60 grade Pond ash concrete is 6% and 7.7% higher than the target mean strength of M50 and M60 conventional

concrete respectively. The flexural behavior of RC beams with pond ash shows that the failure is brittle when compared to the conventional concrete. The energy absorbed by the conventional beams is more than the pond ash beams. Therefore pond ash is suggestible for construction practices by improving the properties by conducting future studies.

Keywords: *High strength concrete, Pond Ash, Fine aggregate, Waste material, Environmental issues, Mechanical properties, Flexural behavior.*

1. INTRODUCTION

1.1 GENERAL

Concrete is a commonly used building material in the world. Conventional concrete is a mixture of cement, fine aggregate, coarse aggregate and water. Compare to all other ingredients, aggregates occupy 75 to 80 % of the total volume of concrete and affect the fresh and hardened properties of concrete. In the total composition of concrete, 25 to 30 % was engaged by the fine aggregate in volume. The quality of concrete is persistent by its mechanical properties. The mechanical properties mainly divided into short-term and long-term properties. Compressive strength, Split tensile strength, Modulus of Elasticity and Flexural strength are short term properties. Porosity and impermeability are the long term properties.

1.2 HIGH STRENGTH CONCRETE

American concrete Institute defines a high-strength concrete and high performance concrete as concrete that has a specified compressive strength to design of 6,000 psi (41 MPa) or greater. Under the ACI definition durability is optional and this has led to

Optimal Identification and selection of Phasor Measurement Units- A Methodology

N V Phanendra Babu,
Assistant Professor, *EEE Dept.*,
Chaitanya Bharathi Institute of Technology,
Hyderabad, Telangana-500075,
phanendrababu_eee@cbit.ac.in

P Suresh Babu,
Assistant Professor, *EED*,
National Institute of Technology Warangal,
Warangal, Telangana-506006,
drsureshperli@nitw.ac.in

Abstract—The Phasor measurement unit (PMU) is becoming an important tool for monitoring, controlling and protecting the electric networks. Hence its deployment for the present and future power system networks has become a great challenge for the planning engineers. The optimal PMU placement (OPP) is quite important strategy for deploying the PMUs optimally. Since the optimization techniques yield multiple solutions, it has become an important task again for the engineers to select the best set out of all the available solutions of results. This paper, after presenting the literature on various optimization methods used for solving OPP problem, suggests Multiple Criteria Decision Making (MCDM) methods to select the suitable solution based on the criteria.

Keywords— PMU; Observability; OPP; optimization; constraints; MADM; Alternatives; Attributes;

I. INTRODUCTION

The invention of Phasor Measuring Unit (PMU) has introduced the backup protection schemes[1], adaptive protection schemes [2-8], model analysis based network redesigning and highly secured power networks [9-10]. Starting from the introduction of optimal PMU placement, many authors have suggested many algorithms to answer the optimal PMU placement. Most of these placements were purely based on observability constraints. And, their results are different from author to author even though their number is different. But, the power utilities are not clear about which set of PMUs should be considered and which set will serve the most of their purpose. To answer this problem, this paper suggests the Multi-Attribute Decision Making methods to be used for selecting the best solution for their desired criteria.

This article is sectionalized as follows: section I introduces PMU and the problem of OPP. Sections II-V List out the mathematical, topological and heuristic algorithms used for solving OPP problem. Section-VI introduces to MCDM techniques and explains TOPSIS method. After discussing the results in section IV, it concludes the work in section V.

A. Phasor Measurement Unit

The Phasor Measurement Unit (PMU) is capable of measuring various synchronized parameters from the power system. To achieve synchronism, it uses synchronizing signals from Global Positioning Satellite (GPS). This has made the PMU the most prominent tool for various power system strategies.

The observability of a bus can be referred as its ability of being measured either directly or indirectly by the PMU placed either to itself or its incidence bus.

II. MATHEMATICAL ALGORITHMS

A. Integer Linear Programming (ILP)

An Integer Linear Programming (ILP) is deterministic strategy in which all the design parameters would take only integer values. An integer linear programming (ILP) based optimal PMU placement for system observability was introduced in [11] where it considers the locations of conventional measurements. The algorithm [12] extends to incorporate conventional measurements to identify the optimal PMU locations. This scheme also gives the PMU locations under any desired level of redundancy. An ILP based multi-stage PMU placement is suggested in [13]. It models zero-injection constraints as linear.

B. Integer Quadratic Programming (IQP)

It deals with the optimization of a quadratic objective function subjected to linear constraints. It assures integer values to all the design variables. In [14], a PMU placement technique was suggested using integer quadratic programming, but, with no including zero-injection effect. It considers both normal as well as the outage of a transmission line or PMU conditions. Paper [15] suggests another IQP approach that uses the network connectivity matrix to determine optimal PMU locations.

III. TOPOLOGICAL ALGORITHMS

A. Depth First Search (DFS)

The Depth First Search algorithm is a recursive algorithm used for traversing network. It searches the vertices of network based on the criteria called backtracking. This algorithm continues visiting all the nodes until the unvisited nodes have been visited. Authors have used DFS algorithm to solve the OPP problem. As the DFS criterion is rigid and unitary, the solution may not be optimum. So, it is failed in finding optimum solution even though it is computationally faster.

B. Minimal Spanning Tree (MST)

It is nothing but the modified DFS method. This modification makes the MST algorithm faster, and improves the complexity and convergence. The PMU placement strategies using this approach are implemented.

Analysis of partial discharge due to copper spherical particle in power transformer under different oil flow models using CFD

11/26/22, 10:15 PM

Investigation of Partial Discharge Due to Copper Spherical Particle in Power Transformer Under Various Oil Flow Models Using ...



Search Log in

Download book PDF

Download book EPUB



Intelligent Manufacturing and Energy Sustainability pp 391–400

Investigation of Partial Discharge Due to Copper Spherical Particle in Power Transformer Under Various Oil Flow Models Using CFD

[N. Vasantha Gowri](#)

Conference paper | [First Online: 15 February 2020](#)

940 Accesses

Part of the [Smart Innovation, Systems and Technologies](#) book series (SIST, volume 169)

Abstract

Power transformer is an important and costly device in electrical power system. Analysis of power transformer is useful to protect the device from different hazards. Mineral transformer oil acts as a coolant and part insulation in power transformers. Transformer cooling is ensured by non-directed or directed flow of oil inside the transformer. Transformer oil is found to consist of conducting

**School of Computer Engineering, KIIT Deemed to
be University, Bhubaneswar, Odisha, India**

Dr. Suresh Chandra Satapathy

Rights and permissions

[Reprints and Permissions](#)

Copyright information

© 2020 Springer Nature Singapore Pte Ltd.

About this paper

Cite this paper

Vasantha Gowri, N. (2020). Investigation of Partial Discharge Due to Copper Spherical Particle in Power Transformer Under Various Oil Flow Models Using CFD. In: Reddy, A., Marla, D., Simic, M., Favorskaya, M., Satapathy, S. (eds) Intelligent Manufacturing and Energy Sustainability. Smart Innovation, Systems and Technologies, vol 169. Springer, Singapore. https://doi.org/10.1007/978-981-15-1616-0_38

[.RIS](#)  [.ENW](#)  [.BIB](#) 

DOI

https://doi.org/10.1007/978-981-15-1616-0_38

Published	Publisher Name	Print ISBN
15 February 2020	Springer, Singapore	978-981-15-1615- 3

Online ISBN	eBook Packages
978-981-15-1616- 0	Engineering Engineering (RO)



Springer Professional

2020 | OriginalPaper | Chapter

Investigation of Partial Discharge Due to Copper Spherical Particle in Power Transformer Under Various Oil Flow Models Using CFD

Author: N. Vasantha Gowri

Published in: Intelligent Manufacturing and Energy Sustainability

Publisher: Springer Singapore

Login to get access

Abstract

Power transformer is an important and costly device in electrical power system. Analysis of power transformer is useful to protect the device from different hazards. Mineral transformer oil acts as a coolant and part insulation in power transformers. Transformer cooling is ensured by non-directed or directed flow of oil inside the transformer. Transformer oil is found to consist of conducting particles moving along the flow path of transformer oil. Particles which are conductive in nature when come in contact with the disc, get stress formed on them and may lead to partial discharge (PD). Partial discharge due to particle is one of the grounds of failure of transformers. To find the behaviour of

Show more

Testen Sie unseren neuen kostenlosen E-Mail Service!

MyTopic Alert

Wählen und kombinieren Sie Themen nach Ihrem Interesse – wir liefern die passenden Inhalte, kostenlos und unverbindlich. [Mehr Informationen](#)

Registrieren

Login

Electric motor

Hybrid Technology

Design + Development

Natural scientific basics

Tribology

Please log in to get access to this content

Log in

Optimal Combined Overcurrent and Distance Relays Coordination using Teaching Learning based Optimization

Saptarshi Roy
Research Scholar, EED
National Institute of Technology
Warangal, India,
saptarshi.roy.ju@gmail.com

Dr. P Suresh Babu
Assistant Professor, EED
National Institute of Technology
Warangal, India,
drsureshperli@nitw.ac.in

N.V.Phanendra Babu
Research Scholar, EED
National Institute of Technology
Warangal, India,
Phanendra229@gmail.com

Abstract—Relay coordination is an important aspect to maintain proper power system operation and control. Relays should be organized in such a way that every relay should have a backup and Coordination time interval (CTI) between primary and back up and different zones of the relay should be maintained to achieve proper fault identification and fault clearance sequence. The relays should operate in minimum desirable time satisfying all the co-ordination constraints. So, relay coordination is nothing but highly constraint problem. Heuristic techniques are often used to get optimal solution of this kind of problem. In this paper this constraint problem is solved by Teaching learning based optimization(TLBO) on a WSCC-3-Machine-9bus system. Proper desirable time setting multiplier (TSM) with minimum operating time of relays are calculated. We also incorporated intelligent over current relay characteristics selection to get the desired results in this work. The results seem to be satisfactory as the results obtained from TLBO are comparatively better than so called conventional methods like Genetic Algorithm(GA) and Particle Swarm Optimization (PSO).

Keywords— Coordination of relay; Coordination time interval; Teaching learning based optimization; Plug setting; Time setting multiplier; Over current relay characteristics.

I. INTRODUCTION

Relays should be organized such a way that every relay should have a backup and CTI between primary and back up and different zones of the relay should be maintained. Relay co-ordination is necessary to achieve proper fault identification and fault clearance sequence. These relays must be able to distinguish between the normal operating currents including short time over currents that may appear due to certain equipment normal operation(e.g- Motor starting currents, transformer inrush currents) and sustained over current due to fault conditions. During fault conditions, these relays must operate quickly isolating the faulted section of the network and allows for continued operation of the healthy circuits. If primary relay meant for clearance of the fault fails, backup relay must operate after providing for sufficient time discrimination for the operation of primary relays. Hence the operation of back up relays must be

coordinated with those of the operation of the primary relays. The flexible settings of the relays (e.g- plug setting, Time multiplier setting and possibly selection of suitable time-current operating characteristics), must be set to achieve the desired objectives.

Over current and distance relays are often used for protection of power system. Now a days this scheme is used in almost all sub-transmission system. To achieve better co ordination, a distance with a distance, an over current with a over current relay and an over current relay with a distance relay must be coordinated. One of them will act as main relay and another one as back up. Proper co-ordination time interval should be maintained between them.

The study of co-ordination of relays was first done among over current relays. Initially it is done by using linear programming method including simplex, two-phase simplex and dual simplex methods[1]-[4]. But the problem regarding using these methods is the solution will not come unless all the constraints are satisfied.

So, people gradually started to use intelligent and meta – heuristic approaches which gives optimal solution instead of exact solution meeting all the constraints criteria. In ref.[5], optimal co-ordination is done by Genetic Algorithm. Ref.[6] shows optimal co ordination by using Particle swarm optimization and Ref.[7] shows the time co ordination by using evolutionary algorithm. But these schemes are having two types of problems. First one is mis coordination and other one is lack of solution for relays with both discrete and continuous time setting multipliers (TSMs). The problems are resolved in [8] by adding a new expression with the objective function. All the above discussed methodologies are done by using over current relays and the relay characteristics are assumed to be fixed. While in digital relays different over current relay characteristics can be selected. So, the algorithm for relay co ordination should be capable of selecting the best fitting characteristics of over current relays to have optimal co ordination.

Ref.[9] shows relay co ordination with an hybrid GA algorithm which is helpful in relay coordination of over current and distance relays. Ref.[10] shows relay co ordination using GA and intelligent relay characteristics selection. Ref.

Power quality Enhancement using Particle swarm optimization based shunt active power filter

S.R.REDDY¹, P.V.PRASAD², G.N.SRINIVAS³

¹Department of EEE, GNITC, Ibrahimpatnam Hyderabad, India,

²Department of EEE, CBIT, Gandipet, Hyderabad, India,

³Department of EEE, JNTU, Hyderabad, India,

rajendarreddys.ceegnitc@gniindia.org.

Abstract. The shunt active power filter is one compelling arrangement is utilized for reducing the source current harmonics distortion in nonlinear load distribution system. The synchronous reference frame (SRF) control algorithm is utilized for creating the current controlled reference signals. The acquired reference control signals are compared with hysteresis controller for better switching of shunt active power filters. Generally SRF with PI controlled shunt active power filter are used for harmonic compensation. But, they won't give better results to bigger variety loads. In these papers a particle swarm optimization (PSO) system is proposed for better tuning of PI values of SRF with PSO-PI controlled shunt active power filter. The simulation results without and with conventional PI and furthermore with PSO-PI is analyzed for nonlinear load distribution system.

Keywords: Shunt active power filter, PI controller, PSO-PI controller, Harmonic compensation, synchronous reference frame theory.

1 Introduction

In presently, the vast number utilization of power electronic and nonlinear devices causes harmonic in distribution system [1]. The harmonic distortion may cause power quality issues, for example, low productivity, poor power factor and influence the neighbouring communication lines [2-5]. These issues are repaid by using passive filters. However, these passive filters are huge in size, consistent compensation and low over loading capacity. To keep away from these disadvantages a shunt active power filters with voltage source inverter (VSI) is created for compensation of current source harmonics and for power factor correction [6]. The triggering signals for the VSI based shunt active power filter are gotten from the proposed synchronous reference frame control algorithm with PI controller [7-10]. The DC interface voltage of VSI is normally controlled by utilizing conventional PI control technique. In conventional technique obtained PI values are not agreeable. In this case, by utilizing PSO control program the obtained PI values are exact and keep up the constant dc bus voltage when compared with the conventional PI controller [11, 12]. PSO is an iterative based enhancement method. It is actualized dependent on the behaviour of of bird's flock and fish school. In pso, the particles have with certain velocity and position in a space is taken from the social conduct of creatures. Here population is called swarm. Swarm comprise of number of particles. Every particle in swarm looking through the best position individually encounters and speaks with their neighbouring best position in swarm insight and gets the position and updates their position and velocity. The particle is seen in the best approach to show signs of improvement and better looking position. The updating of velocity of every particle is their very own encounters and in addition involvement with their neighbours. PSO method is increasingly proficient tackling nonlinear, non differential and high dimensional issues [13-15].

In this paper a VSI based shunt active power filter is implemented. Here the Proportional & Integral values of the of PI controller for the DC link voltage is controlled by utilizing PSO program rather than conventional PI control for better harmonic reduction and power factor enhancement. The simulation results with PI and PSO-PI is analyzed in MATLAB/SIMULINK software.

2 Shunt Active Power Filter

Fig-1. Shows the system setup of three phase three wire non linear load distribution system with the proposed shunt active power filter.

The nonlinear load introduces harmonics disturbance at the source side. The harmonics disturbance is eliminated by connecting shunt active power filter. The shunt active power filter comprises of 3-Leg voltage source inverter with dc link capacitor. The voltage source inverter comprises of 6 IGBT switches with anti parallel diodes. The gate signals to IGBT's are gotten from the proposed synchronous reference frame control circuit. The filter inductance L_f is utilized for smoothing the injected compensating currents.

A Novel technique to observe the performance of virtual solar PV module system

11/26/22, 10:25 PM

A Novel Technique to Observe the Performance of Virtual Solar PV Module System | SpringerLink



Search Log in

Download book PDF

Download book EPUB



Innovations in Electrical and Electronics Engineering pp 653–660

A Novel Technique to Observe the Performance of Virtual Solar PV Module System

[G. Suresh Babu](#) & [N. R. Sai Varun](#)

Conference paper | [First Online: 24 March 2020](#)

670 Accesses | **1** Citations

Part of the [Lecture Notes in Electrical Engineering](#) book series (LNEE, volume 626)

Abstract

Photovoltaic (PV) energy source or a PV emulator is required to analyze the performance of PV equipment under fluctuating conditions. Typical PV modules are costly and static with limited customization abilities. A PV emulator can realize the characteristics of various PV modules under various test conditions (type of locality, climatic conditions, different irradiations, varying temperatures, and various maximum power point tracking (MPPT)

[https://link.springer.com/chapter/10.1007/978-981-15-2256-7_59#:~:text=A PV emulator can realize,\(MPPT\) algorithms\) virtually.](https://link.springer.com/chapter/10.1007/978-981-15-2256-7_59#:~:text=A PV emulator can realize,(MPPT) algorithms) virtually.)

1/15

Cite this paper

Suresh Babu, G., Sai Varun, N.R. (2020). A Novel Technique to Observe the Performance of Virtual Solar PV Module System. In: Saini, H., Srinivas, T., Vinod Kumar, D., Chandragupta Mauryan, K. (eds) Innovations in Electrical and Electronics Engineering. Lecture Notes in Electrical Engineering, vol 626. Springer, Singapore.

https://doi.org/10.1007/978-981-15-2256-7_59

[.RIS](#) [.ENW](#) [.BIB](#)

DOI

https://doi.org/10.1007/978-981-15-2256-7_59

Published	Publisher Name	Print ISBN
24 March 2020	Springer, Singapore	978-981-15-2255- 0

Online ISBN	eBook Packages
978-981-15-2256- 7	Engineering Engineering (R0)

Share this paper

Anyone you share the following link with will be able to read this content:

[Get shareable link](#)

Provided by the Springer Nature SharedIt content-sharing initiative

Not logged in - 103.152.185.252

AICTE Electrical & Electronics & Computer Science Engineering (3000684219) - CBIT-Library & Information Centre Hyderabad (3000950898)

18

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



Advances in Decision Sciences, Image Processing, Security and Computer Vision pp 327–334

An Experimental System Level Performance Analysis of Embedded Systems for GSM Application

[M. Rajendra Prasad](#)  & [D. Krishna Reddy](#)

Conference paper | [First Online: 26 July 2019](#)

863 Accesses

Part of the [Learning and Analytics in Intelligent Systems](#) book series (LAIS, volume 4)

Abstract

As per the requirement of embedded industry domain the processor system level performance has to be evaluated and tuned to match the required constraints of an application specification, so system level design methodology for embedded application-specific development system is becoming challenging. A novel System Level Design Methodology (SLDM) is developed to implement system level computational platform to evaluate the system level performance, investigate the system level issues and performance improvements of

About this paper

Cite this paper

Rajendra Prasad, M., Krishna Reddy, D. (2020). An Experimental System Level Performance Analysis of Embedded Systems for GSM Application. In: Satapathy, S., Raju, K., Shyamala, K., Krishna, D., Favorskaya, M. (eds) Advances in Decision Sciences, Image Processing, Security and Computer Vision. Learning and Analytics in Intelligent Systems, vol 4. Springer, Cham. https://doi.org/10.1007/978-3-030-24318-0_40

[.RIS](#) [.ENW](#) [.BIB](#)

DOI

https://doi.org/10.1007/978-3-030-24318-0_40

Published	Publisher Name	Print ISBN
26 July 2019	Springer, Cham	978-3-030-24317-3

Online ISBN	eBook Packages
978-3-030-24318-0	Intelligent Technologies and Robotics Intelligent Technologies and Robotics (R0)

Not logged in - 103.152.185.252

AICTE Electrical & Electronics & Computer Science Engineering (3000684219) - CBIT-Library & Information Centre Hyderabad (3000950898)



ICDSMLA 2019 pp 458–465

Comparative Analysis of Serial and Parallel Satellite Positioning Algorithms for GPS and NavIC

[K. Sudershan Reddy](#) , [Md. Khaja Rahmatullah](#), [Sameeha Fahmeen](#), [Quddusa Sultana](#) & [D. Krishna Reddy](#)

Conference paper | [First Online: 19 May 2020](#)

37 Accesses

Part of the [Lecture Notes in Electrical Engineering](#) book series (LNEE, volume 601)

Abstract

India has established its native satellite navigation system called as Indian Regional Satellite Navigation System (IRNSS) which is officially named as Navigation with Indian Constellation (NavIC). Global Positioning System (GPS) is an all-round, all weather, real time global satellite navigation and positioning system developed by US. In these systems, the time needed for the computation of satellite positioning affects the accuracy of the final observation point positioning. However, as GPS is widely used in real

Copyright information

© 2020 Springer Nature Singapore Pte Ltd.

About this paper

Cite this paper

Sudershan Reddy, K., Rahmatullah, M.K., Fahmeen, S., Sultana, Q., Krishna Reddy, D. (2020). Comparative Analysis of Serial and Parallel Satellite Positioning Algorithms for GPS and NavIC. In: Kumar, A., Paprzycki, M., Gunjan, V. (eds) ICDSMLA 2019. Lecture Notes in Electrical Engineering, vol 601. Springer, Singapore. https://doi.org/10.1007/978-981-15-1420-3_47

[.RIS](#) [.ENW](#) [.BIB](#)

DOI

https://doi.org/10.1007/978-981-15-1420-3_47

Published	Publisher Name	Print ISBN
19 May 2020	Springer, Singapore	978-981-15-1419-7

Online ISBN	eBook Packages
978-981-15-1420-3	Intelligent Technologies and Robotics Intelligent Technologies and Robotics (RO)

Inset fed Triple Band U-Slot Antenna for GSM900/GSM1900/WLAN Applications

J. Rajeshwar Goud, N. V. Koteswara Rao, A. Mallikarjuna Prasad

Abstract:—To cover Global System for Mobile Communication(GSM) and WLAN frequency bands, three distinctive Inset fed antennas like rectangular microstrip, dualband dual slot and antennas are designed. Inset fed microstrip antenna is used for GSM1900 with an impedance bandwidth from 1.90GHz to 1.96GHz; Inset fed dual band dual slot antenna is used for GSM1900 and WLAN with impedance bandwidth is considered first band from 1.90GHz to 1.95GHz; and second band from 2.38GHz to 2.42GHz. The proposed Inset fed triple band antenna is used for GSM900, GSM1900 and WLAN with appropriate position of slot, is to operate in frequency ranges of first band is from 920MHz to 940MHz; second band is from 1.91GHz to 1.94GHz; and third band is from 2.39GHz to 2.43GHz. A correlation among various feed widths, feed lengths and slot widths are exhibited in this paper.

Keywords:—Inset fed, Triple band, Dual band, Slot antenna, HFSS, Patch antenna, GSM, WLAN.

I. INTRODUCTION

In present days, design of dual band and triple band patch antennas are highly desirable for wireless communication applications. Patch antennas inferable from their favorable circumstances, for example, low profile, reasonable to produce, light weight and simple to create. In spite of these points of interest, there are not many inconveniences like limited bandwidth, less power dealing with limit in patch antennas [1-2]. For the most part patch antennas work in various frequency bands, separate antennas are used to cover each band which prompts space-confining issue. One approach to satisfy this necessity is utilizing various antennas, yet it will build the size and intricacy of the system. To overcome this issue, slot antennas are required which gives dual band and triple band frequencies using single antenna with appropriate slot position. From now on it diminishes the system size and multifaceted nature [3]. Large bandwidth can be achieved by adjusting the slot dimensions, which include different shapes like rectangular, triangular, circular [4], elliptical [5], triangles [6] are reported. To achieve dual band operation edge feed has been used [7]. Multi service wireless system. Wide band or dual band and triple band antennas are needed[8-11].

To obtain dual band and triple band behavior in patch antennas by providing slot and excite the antenna in orthogonal direction or Y-shape using microstrip line feeds[12-14]. Regardless, these dual band and triple band

slot antennas are large in size, most of the wireless applications minaturized antennas are needed. In literature designed edge cut dual band slot antenna, which finds applications in Bluetooth/WLAN and WiMAX [15] and Corner cut Insetfed dual band slot antenna for PCS and Bluetooth/WLAN Applications [16] which improves the impedance matching.

A novel design of Inset fed triple band U slot, Insetfed dual band dual slot and Inset fed microstrip antennas were presented. These antennas are little in size, straightforward development and minimal effort. By providing inset feed to these antennas better impedance matching is achieved. Dual band and triple band operation is obtained with appropriate slot dimensions, which find applications in GSM and WLAN. The VSWR, return loss, peak gain, peak directivity, radiation pattern and radiation efficiency are explained as well as design details of these antennas are discussed in this paper.

II. ANTENNA CONSTRUCTION AND DESIGN

The Inset fed microstrip antenna geometry is showed up in fig.1, Inset fed dual band dual slot microstrip antenna configuration is showed up in fig. 2, and Inset fed tripleband U slot microstrip antenna structure is showed up in fig.3.

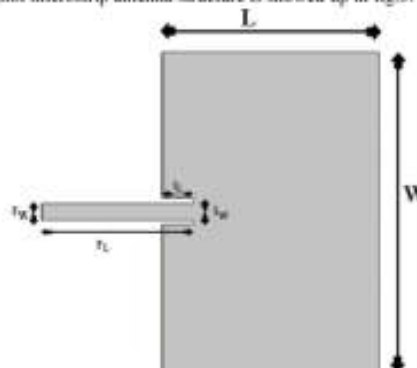


Fig. 1. Inset fed microstrip antenna

Revised Manuscript Received on 14 August, 2019.

J. Rajeshwar Goud, Ph.D Scholar, ECE Dept., JNTUK, Kakimada, A.P., India. (Email: rajeshwargoud@gmail.com)

N. V. Koteswara Rao, Professor, ECE Dept., Chatarya Bharathi Institute of Technology, Hyderabad, T.S., India. (Email: nvkoteswararao@gmail.com)

A. Mallikarjuna Prasad, Professor, ECE Dept., University College of Engineering, JNTUK, Kakimada, A.P., India. (Email: a_malli65@yahoo.com)

Retrieval Number: F12700986S319/2019GBEJESP
DOI: 10.35940/ijet.F1270.0986S319

1513

Published By:
Blue Eyes Intelligence Engineering
& Sciences Publication





Estimation and Analysis of Instrumental Biases for GPS and NavIC Satellites and Receivers

Sana Fathima¹, Sudershan Reddy Kotla², Sameeha Fahmeen³, Quddusa Sultana⁴, Desireddy Krishna Reddy⁵

¹Department of Electronics and Communication Engineering, Deccan College of Engineering and Technology, India, sanamohammed92@gmail.com

²Department of Electronics and Communication Engineering, Chaitanya Bharati Institute of Technology, India, kotla66@yahoo.com

³Department of Computer Science Engineering, Shadan Women's College of Engineering and Technology, India, samfahmeen08@gmail.com

⁴Department of Electronics and Communication Engineering, Deccan College of Engineering and Technology, India, quddusas@gmail.com

⁵Department of Electronics and Communication, Chaitanya Bharati Institute of Technology, India, dkreddy@cbit.ac.in

ABSTRACT

The positional accuracy of Global Positioning System (GPS) and Navigation with Indian Constellation (NavIC) are affected by errors, one of the predominant errors is instrumental delay. This delay distorts the satellite signal and effect the position accuracy. To counter this problem, efficient models shall be used. In this paper, satellites' and receivers' instrumental bias is estimated using a modified Fined Receiver Bias (FRB) method, Singular Value Decomposition (SVD) technique and Self-Calibration of Pseudo Range Error (SCORE) model. The FRB method is based on the minimization of standard deviation of vertical Total Electron Content (TEC) computed from different satellites. The SVD based Least Mean Square (LMS) algorithm uses the values of one-day period corresponding to four GPS and NavIC stations. It uses data from dual frequency GPS receivers. To derive the instrumental bias errors the SCORE technique uses a self-consistency constraint on the receiver's measurements of ionospheric delay.

Key words: FRB, Instrumental Delay, SVD, SCORE

1. INTRODUCTION

GPS is a satellite based navigation system developed by the Department Of Defense (DOD) of United State Government. The GPS consists of six orbital planes with four satellites each. Hence, GPS constellation contains a minimum of 24 satellites [1]. NavIC has a 7-satellite constellation which covers India and a range of 1,500 km beyond its borders [2]. NavIC can provide position accuracy of within 10m over the

Indian landmass and less than 20m over the oceans. NavIC system operates at two frequencies L5 and S that provide two types of services i.e. Standard Positioning Service (SPS) for civilians and Restricted Service (RS) for specific users. The accuracy of user position depends on ranging errors. For better position estimation these errors should be analyzed and mitigated. The GPS receiver makes corrections for clock errors and other effects but there are still residual errors which are not corrected. The signal that is modulated by the carrier is delayed by the instrumental bias [3]. The amount of delay in the signal is directly proportional to the TEC in the signal path and inversely proportional to the square of the operating frequency.

2. SINGULAR VALUE DECOMPOSITION ALGORITHM

To reduce multipath errors noise and Singular Value Decomposition (SVD) algorithm is used. The SVD based LMS algorithm is used to estimate the instrumental biases [4].

Step 1: The GPS position is estimated using Bancroft method and Kalman filter.

Step 2: The earth-centered angle is estimated using elevation angle (E) of the satellites with respect to the ground station GPS and also IRNSS receiver.

$(E, S, A) = \text{elevation}(\text{receiver}(x, y, z), \text{satellite}(X, Y, Z))$ (1)
Where, x, y, z are the receiver's and X, Y, Z are the satellite's coordinates respectively.

Step 3: TEC is estimated using GPS dual frequency and pseudo ranges by using the following formula,

$$TEC = (P2 - P1) / 40.30 * (f1^2 + f2^2) / (f1^2 - f2^2) \quad (2)$$

Where, $f1$ and $f2$ are the GPS frequencies, $P1$ and $P2$ are the pseudo ranges

Step 4: Slant TEC is computed using the vertical TEC and Slant factor,

$$STEC = \text{Slant factor} * TEC - (\text{fitted biases}) \quad (3)$$

Where, Slant factor is estimated from,

$$1 + (16 * ((0.53 - \text{elev})^2 / 3)) \quad (4)$$



Augmentation of NavIC with GPS Over Indian Region

Sudershan Reddy Kotla¹, Sameeha Fahmeen², Quddusa Sultana³, D Krishna Reddy⁴

¹Department of Electronics and Communication Engineering, Chaitanya Bharati Institute of Technology, India
kotla66@yahoo.com

²Department of Computer Science Engineering, Shadan Women's College of Engineering and Technology, India
samfahmeen08@gmail.com

³Department of Electronics and Communication Engineering, Deccan College of Engineering and Technology
India, quddusas@gmail.com

⁴Department of Electronics and Communication, Chaitanya Bharati Institute of Technology, India
dkreddy@cbit.ac.in

ABSTRACT

Global Positioning System (GPS) satellites are used to provide navigational services to the users in India. But now for security reasons, Indian Space Research Organization (ISRO) has developed its own navigation satellite system called as Indian Regional Navigation Satellite System (IRNSS). IRNSS is renamed as Navigation with Indian Constellation (NavIC). NavIC is an emerging satellite based navigation system offering an independent positioning and timing service over India and neighboring regions. Position accuracy of NavIC is 10m on land and 20m in Indian Ocean within 1500km around Indian Boundary. Moreover, to increase user position accuracy, the NavIC can be augmented with other navigation systems. This paper focuses, initially, on the analysis of satellite visibility of augmented NavIC with GPS. Comparative analysis of NavIC and NavIC augmented with GPS is also done in terms of Position Dilution of Precision (PDOP). PDOP specifies the user position error caused by the relative position of the satellites.

Key words: DOP, GPS, NavIC, Satellite Visibility.

1. INTRODUCTION

In May 2006, India decided to develop its own Navigation satellite system called as Indian Regional Navigation Satellite System (IRNSS) [1]. IRNSS is also known as Navigation with Indian Constellation (NavIC). The requirement of such a navigation system is driven by the fact that access to Global Navigation Satellite Systems (GNSSs) like GPS is not guaranteed in hostile situations. NavIC provides two services, one is the Standard Positioning Service (SPS) open for civil use and the other is Restricted Service (RS), encrypted one, for authorized users (military). NavIC if augmented with other navigation systems is expected to provide navigation and guidance with good accuracy. This paper focuses on the assessment of satellite visibility of NavIC-7 (NavIC with 7 satellites) augmented with GPS. Comparative analysis of the

augmented system with standalone NavIC-7 is also done in terms of PDOP.

2. OVERVIEW OF GPS AND NAVIC

The GPS constellation consists of a minimum of 24 satellites positioned in six orbital planes. Each orbit consists of 4 satellites. The orbital planes are inclined at an angle of 55° with respect to the equator. A minimum of 4 satellites are visible from any point on the surface of the earth. The GPS satellites are placed at a height of 20,200 km from the surface of the earth [2].

The NavIC has three segments. They are: Space segment, Ground segment and User segment. The NavIC space segment has a constellation of 7 satellites, orbiting above the earth at a height of 36000 km approximately. Out of 7 satellites, 3 satellites are placed in Geostationary Orbit (GEO) and 4 satellites are placed in Geosynchronous Orbits (GSO). NavIC satellites in Geosynchronous Orbits (GSO) are at a height of 36000 km, and are inclined at an angle of $\pm 29^\circ$ with the equator [3]. Due to this inclination, satellites provide coverage to the higher and lower latitudes near the poles. In Geostationary Orbit (GEO) they remain above the equator.

3. ESTIMATION OF SATELLITE VISIBILITY OF NAVIC-7 AUGMENTED WITH GPS

In case of NavIC-7, three SVs (IRNSS-1C, 1F, 1G) are GEO and four SVs (IRNSS-1I, 1B, 1D, 1E) are GSO. There is a possibility of the overlap of two GSO SVs (IRNSS-1I, 1D) with the other two GSO SVs (IRNSS-1B, 1E) respectively, twice a day, deteriorating the geometry required for proper positioning. Hence, the best as well as the worst cases of satellite visibility are considered for NavIC-7. Augmentation of NavIC with GPS is done according to their respective timings i.e. the constellation of NavIC at 6:00 am is augmented with the constellation of GPS at the same time and so on [4]. Latitude and longitude range of satellite visibility for all the four cases is shown in Table 1.

Preliminary Performance Analysis of IRNSS in Sea Environment”

"Configuring Artificial Neural Network by using Optimization Techniques to Recognize Speaker Voice"

Forecasting of Ionospheric Scintillations by using Statistical Models

K. Lakshmana, N. Alivelu Manga and A.D. Sarma

Department of ECE, Chaitanya Bharathi Institute of Technology (CBIT)

Hyderabad, Telangana State, India

lakshmana05@gmail.com, namanga04@gmail.com and ad_sarma@yahoo.com

Global Positioning System (GPS) signals when propagate through ionosphere, experience random amplitude and phase fluctuations due to ionospheric irregularities. The variations in amplitude and phase if severe enough, degrade the receiver position accuracy and may result even complete loss of lock. The occurrence of ionospheric scintillations depends on geographic area, time of the day, solar cycle and season. From the literature, the occurrence of scintillations is more in low latitude region, medium at polar region and low at mid latitude region. Forecasting of scintillations is necessary in strategic applications to avoid the disruption of services. Significant work on forecasting TEC over low latitude region is reported, but not much on forecasting scintillations. In this paper, various forecasting statistical models like Holt-Winter (H-W), Exponential Smoothing (ES) and Grey Model (GM)) are used for forecasting amplitude (S_{α}) and phase (σ_{ϕ} (rad)) scintillations of GNSS signals. In the present analysis, the Golden Section Search method is used for optimization of statistical errors for better performance. The Golden Section Search method provides the optimum values of smoothing coefficients (α , β and γ) for achieving the minimum statistical error. For this analysis, GAGAN TEC receiver data (2016) of low latitude station Hyderabad is considered. Acquired data is segregated into 4 seasons namely winter (January and February), pre-monsoon or summer (from March to May) and southwest monsoon or rainy (from June to September) and post monsoon or autumn (from October to December) according to India Meteorological Department (IMD) and is used for analysis. Finally, the forecasted results are compared with observed scintillations for evaluating the performance of models in terms of various statistical parameters like Standard Deviation (SD), Mean Square Deviation (MSD), Mean Absolute Error (MAE), Mean Absolute Percentage Error (MAPE) and Mean Percentage Error (MPE). The forecasted results due to considered models are satisfactory. Our preliminary results indicate that the performance of Grey model is better than the rest of the models.

“Comparative Performance Analysis of Galileo and NavIC at a Low Latitude Station

Comparative Performance Analysis of Galileo and NavIC at a Low Latitude Station

Devadas kuna¹, N. Santhosh¹, P. Naveen Kumar¹ and A.D. Sarma²

1. Department of ECE, OU, Hyderabad.

2. Department of ECE, CBIT, Hyderabad.

E-mail: dev.navic@gmail.com

Galileo is an emerging civilian controlled Global Navigation Satellite System (GNSS), being developed by European Space Agency (ESA) and European Union (EU). Galileo comprises of 30 MEO (Medium Earth Orbit) satellites constellation. Currently, 17-satellites are operational and are visible from India at different times. The NavIC (Navigation with Indian Constellation) is an independent and indigenous regional navigation system developed by ISRO, India. NavIC is a seven satellites constellation, three are geostationary and four are geosynchronous satellites, and provides continuous visibility over Indian region. The Galileo operates on L-band (1-2 GHz) whereas NavIC operates on both L-band and S-bands (2-4 GHz). The advantage of S-band is ionospheric delay is relatively less, but susceptible to interference. Galileo's received signal power levels are 3dB higher than NavIC. For evaluating the comparative performance of Galileo and NavIC, 24-hours data from two static-mode receivers with 5th mask-angle located at Osmania University, Hyderabad (17°24'28.07"N, 78°31'4.26"E) are considered for two continuous days (8 and 9 August 2018). During a whole day, 3-8 Galileo satellites are visible; whereas a minimum 4 satellites are available for about 4-5 hours. Often, Galileo DOP's values (1.5) are better than NavIC DOP's (2.5). A good Galileo satellite geometry results in best GDOP (1.88) and PDOP (1.70) better than NavIC when four or more satellites are visible. For a dual frequency receiver with 99% of service to public, the Galileo horizontal position accuracy (4-meters) is better than NavIC horizontal accuracy (5-meters). The Galileo satellites E3, E7 and E25 are at high elevations (>60°) and therefore, experience less propagation effects due to troposphere and ionospheres and are useful to obtain better accuracy. In contrast to GPS, the high elevated satellites are useful for low latitude and polar region's weather monitoring. It is likely that, NavIC with Galileo satellites rather than GPS will provide more precise and reliable GNSS applications and services in low latitude regions.

Ref: Devadas kuna, N. Santhosh, P. Naveen Kumar and A.D. Sarma “Comparative Performance Analysis of Galileo and NavIC at a Low Latitude Station” in 20th symposium NSSS-2019 (National Space Science Symposium), 29-31 January 2019, Savitribai Phule Pune University, Pune.

“IRNSS and GPS Satellite User Range Accuracy Analysis for Receiver Autonomous Integrity Monitoring

”



Numerical Optimization in Engineering and Sciences pp 583–589 | [Cite as](#)

Predictive Data Optimization of Doppler Collision Events for NavIC System

P. Sathish & D. Krishna Reddy

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

440 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 of the DC depends upon the usage of geostationary (GEO) satellites in position estimation. The DC may occur when the relative Doppler shift between two satellites is less than the bandwidth of receiver code tracking loop. To analyze the DC events, the required navigational data are collected from

Download book PDF 

Download book EPUB 

Sections  Figures  References 

[Abstract](#)

[Introduction](#)

[DC Predictive Analysis Methods for NavIC](#)

[Results and Discussions](#)

[Conclusion](#)

[References](#)

[Author information](#)

[Editor information](#)

[Rights and permissions](#)

Development of Raspbian kernel Customization for Automatic Railway Level Crossing Application

Sathish Pasika, D. Krishna Reddy, N. Alivelu Manga

Abstract: In the recent years, the usage of the linux Operating System (OS) becomes very important for the real-time monitoring applications. The performance of embedded application depends on the important factors such as response time, memory size and power consumption. Among these parameters, memory size plays an vital role in kernel implementation. Customizing a general purpose OS to an application-specific OS is a challenging task for real time environments. Raspbian OS is the most recommended, open-source linux based OS for Raspberry pi board. In this paper, the customization of the Raspbian OS for automatic railway level crossing application is discussed. The novelty of this paper is to develop various algorithms for the customization of Raspbian OS and implementation of the application. The application is implemented by using Raspberry pi 3 board, IR sensors, DC motor, LED and buzzer. The railway gate is controlled by using IR sensors and DC motor interfaced through pi board. An IoT based application is to be developed for real time monitoring of the status of train and railway gate. The memory size of the Raspbian OS kernel is reduced by 42.71% after the customization.

Index Terms: Raspbian OS, Customization, Web server, Internet of Things

I. INTRODUCTION

Linux is an open-source operating system in which the source code of the kernel is freely available and can be customized for various applications based on their specifications.

Revised Manuscript Received on May, 2019.

First Author: Assistant professor, Dept. of ECE, Chaitanya Bharathi Institute of Technology, Osmania University Hyderabad, Telangana, India, e-mail: sathish35cece@gmail.com.

Second Author: Professor and Head, Dept. of ECE, Chaitanya Bharathi Institute of Technology, Osmania University Hyderabad, Telangana, India.

Third Author name: Associate Professor, Dept. of ECE, Chaitanya Bharathi Institute of Technology, Osmania University Hyderabad

Retrieval Number: A 1034 0581C19

The significance of customization of the kernel is removing the unnecessary modules in order to minimize the memory size and increase the application response time [8,9]. The development of the embedded OS is very important for the IoT (Internet of things) based applications. Raspberry pi board is an OS based board which was developed by Raspberry pi foundation. It has a microSD card support mounted on it. The OS is ported into SD card ported on it. In this paper, to develop automatic railway level crossing application by using raspberry pi the necessary modules of the kernel are considered. The process of implementation of the entire setup is divided into two steps. The first step is customization of Raspbian kernel and second step is development of IoT based application for automatic railway level crossing [1,2]. In the first step, the raspbian OS kernel is cloned from the git repository and is customized by removing unnecessary modules. A customized raspbian kernel image is created and is ported into the microSD card mounted on raspberry pi board. In the second step, the raspberry pi board with customized raspbian kernel is interfaced with various components to develop automatic railway level crossing application [5,6,7]. Python language is used for the source code development of the application. An Apache web server and HTML are used for the IoT application development. The paper has been accepted, prepare it in two-column format, including figures and tables.

II. RASPBIAN FILE STRUCTURE

The file structure of the Raspbian OS needs to be considered for the kernel customization process. The various directories and its importance are listed below:

bin - a standard subdirectory that contains executable programs



Published By:
Blue Eyes Intelligence Engineering
& Sciences Publication

“Embedded Zero-Tree Wavelet Coding with Selective Decomposition Bands”

Conferences > 2019 International Conference

Embedded Zero-Tree Wavelet Coding with Selective Decomposition Bands

Publisher: IEEE

Cite This

PDF

K. L. Narasimhaprasad ; M. V. Nagabhushanam ; V. V. Satyanarayana Tallapragada ; Jaya Krishna Sunkara [All Authors](#)

1

Paper
Citation

49

Full
Text Views



Abstract

Document Sections

- I. Introduction
- II. Embedded Zero Tree Wavelet Coding
- III. Proposed Coding Scheme
- IV. Simulation Results
- V. Conclusion

Abstract:

Wavelets and its applications became widespread with the inception of embedded zerotree wavelet coding since past two decades. The wavelet transform decomposes any signal into different decomposition bands. As the level of decomposition progresses, the bands are further decomposed. But, the low frequency bands carry significant role in reconstruction. When a wavelet based coding scheme is to be applied, all the bands are being considered, which raises memory requirement on the encoded or compressed data. In this paper, EZW coding is exploited in depth to identify the ways of reducing number of symbols generated by which the Compression Ratio(CR) will be improved without reducing much of the quality. Now the proposal of the paper is that, as HH band constitutes a minor role in reconstruction, the band is supposed to be ignored, making all the coefficients in that band insignificant expecting a significant improvement in compression ratio and PSNR. Results show better PSNR and CR.

10.1109/ICIC52121.2020.9372222

" Deep learning-based fire fighting robot"

*Proceedings of the INTERNATIONAL CONFERENCE ON ENGINEERING AND ADVANCEMENT IN TECHNOLOGY
9th & 10th April 2019, Chennai, India*

65. DEEP LEARNING BASED FIRE FIGHTING ROBOT

M.V. Sireesha, Assistant Prof.,
Electronics and Communication Engineering
Chaitanya Bharathi Institute of Technology (Autonomous)
Hyderabad, India
Md. Masinuzzama
Electronics and Communication Engineering
Chaitanya Bharathi Institute of Technology (Autonomous)
Hyderabad, India

A. Trivedh
Electronics and Communication Engineering
Chaitanya Bharathi Institute of Technology (Autonomous)
Hyderabad, India
K. RonithRaj
Electronics and Communication Engineering
Chaitanya Bharathi Institute of Technology (Autonomous)
Hyderabad, India

With the advent of technology, humans are replaced with robots in life-threatening situations. Fire accidents are one of the major mishaps threatening the human lives. The project aims to design a robot capable of detecting and suppressing fires. The robot is capable of seeking the location of fire over a defined region and mitigate it before it runs out of control. It can also send the images of fire to the concerned user alarming them. This can be achieved efficiently using a Deep Learning concept called Computer Vision. The proposed model can find its applications in domestic as well as industrial premises.

Lords Institute of Engineering & Technology

*Organization of Science and Innovative Engineering & Technology
ISBN 978-93-81288-18-4*

"Augmentation of NavIC-11 with BEIDOU-3 Over Indian Region"

Augmentation of NavIC-11 with BeiDou-3 Over Indian Region

Sudershan Reddy Kotla
*Department of Electronics and
Communication Engineering
Chaitanya Bharathi Institute of
Technology
Hyderabad, India
kotla66@yahoo.com*

Sameeha Fahmeed
*Department of Computer Science and
Engineering
Shaadi Women's College of
Engineering and Technology
Hyderabad, India
samfahmeed08@gmail.com*

Quddus Sultana
*Department of Electronics and
Communication Engineering
Deccan College of Engineering and
Technology
Hyderabad, India
quddus45@gmail.com*

D Krishna Reddy
*Department of Electronics and
Communication Engineering
Chaitanya Bharathi Institute of
Technology
Hyderabad, India
dkreddy@cbti.ac.in*

XXX-X-XXXX-XXXX-X/XX/XXX.00 ©20XX IEEE

Abstract—India has developed its domestic navigation satellite system called as Indian Regional Navigation Satellite System (IRNSS) which is renamed as Navigation with Indian Constellation (NavIC). NavIC-7 (with 7 satellites) provides navigation services to Indian landmass with an extension of 1500 km beyond the boundary. NavIC-11 (with eleven satellites) in future will provide an extended service, covering even polar regions. Studying the satellite visibility over Indian region is vital as it is an important parameter to analyze the accuracy of user position. To improve position accuracy, NavIC-7 or 11 can be augmented with other navigation satellite systems, such as Global Positioning System (GPS) of US, Global Navigation Satellite System (GLONASS) of Russia or BeiDou-3 of China. The BeiDou-3 is China's third generation satellite navigation system developed by China National Space Administration (CNSA). This paper focuses, on the augmentation of proposed constellation of NavIC-11 with proposed constellation of BeiDou-3 over Indian Region. Satellite visibility and the respective Dilution of Precision (DOP) values are computed and compared. Satellite visibility and DOP values are found enhanced due to augmentation.

Keywords—BeiDou-3, NavIC, satellite visibility, DOP

1. INTRODUCTION

Recently, India has developed its individual navigation satellite system to cater both civilian and defense requirements, called as Indian Regional Navigation Satellite System (IRNSS) with an operational name of Navigation with Indian Constellation (NavIC). It provides real-time positioning and timing services. Presently, the NavIC, called as NavIC-7, comprises of 7 satellites, with 3 launched in Geostationary Orbit (GEO) and 4 in Inclined Geosynchronous Orbit (IGSO) [1]. The future constellation of NavIC will be of 11 satellites, called NavIC-11. NavIC-11 will increase the coverage to extended regions of northern and southern parts of India, and even the Polar Regions, by placing the new 4 satellites highly inclined in Geo Synchronous Orbits (GSOs). Though, presently NavIC-7 is sufficiently good for social applications but for critical applications it needs to get supplemented with other navigation systems. The other visible global navigation satellite systems visible over India are GPS, GLONASS, Galileo of Europe and Chinese BeiDou-3.

The BeiDou System (BDS) is a navigation system developed by China. It is been developed in three phases. The first phase called BeiDou-1 (since 2000) had only 3-4 satellites which were launched for experimental reason. The second phase is named BeiDou-2 also called as COMPASS. It is a home-grown system with a constellation of 10 satellites which became operational in 2011. Since December 2012, it has been offering services in the Asia-Pacific region [2]. The modernization plan of BeiDou-2 is characterized as BeiDou-3. The first BeiDou-3 satellite was launched on 30th March, 2015. As of January, 2018, nine BeiDou-3 satellites have been launched. By 2020, BeiDou-3 is planned to have 35 satellites in which 5 are Geostationary Orbit (GEO), 27 are Medium Earth Orbit (MEO) and 3 are Inclined Geo Synchronous Orbit (IGSO) [2]. This paper focuses on the augmentation of proposed constellation of NavIC-11 and BeiDou-3 over Indian region. Estimation of DOP value which is a function of satellite geometry is very important in assessing the performance of the navigation system. This aspect is also considered in this paper.

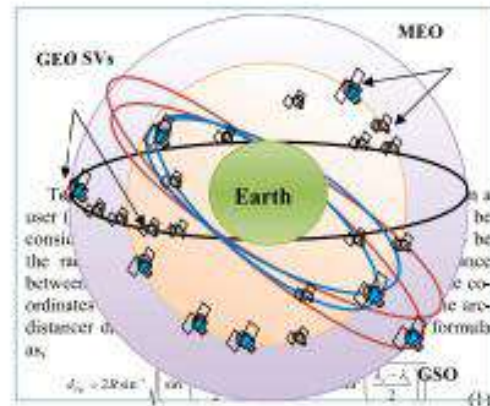
II. OVERVIEW OF NAVIC AND BEIDOU-3

NavIC is a self-governing regional and native satellite navigation system. NavIC-7 provides position precision of < 20 m throughout India. There are future plans to extend NavIC-7 system by escalating constellation size from 7 satellite vehicles (SVs) to 11SVs [3]. NavIC-11 is intended to provide position accuracy of < 10 m over India and beyond it.

China started to build up the third generation BeiDou system called BeiDou-3, a global one, in 2015 (Fig. 1). The BeiDou-3 uses satellites in MEO, GEO and IGSO. BeiDou-3 SVs are already in operation for the Chinese and Asia-Pacific Area with global availability planned to be completed by 2020 [4]. The details of the BeiDou satellites are mentioned in Table I.

TABLE I. SATELLITE VEHICLES OF BEIDOU-3

Block	Launch Period	Satellite Launches			Currently in Orbit
		Successful	Failed	Planned	
BeiDou-1 (GEO)	2000-2007	4	0	0	0
BeiDou-2 (MEO)	From 2007	10	0	0	10
BeiDou-3 (MEO)	From 2015	9	0	26	0
Total		23	0	26	10



IV. RESULTS

NavIC-7 satellite locations are provided in open literature [5]. Data on proposed satellite locations for NavIC-11 is collected from Indian Space Research Organization (ISRO). The data on proposed satellite locations of BeiDou-3 satellites is collected on 15th October, 2018 at four different epochs i.e. 6:00am, 6:00pm, 12:00am and 12:00pm from a website [6]. The NavIC-11 IGSO satellites trace dumbbell shaped orbits, as for the observer on the ground. When the satellites are at maximum inclination they are said to form the best configuration. This configuration forms at two epochs as per Indian Standard Time (IST). They are 06:00am (Best case-1) and 06:00pm (Best case-2). The satellite configuration at four different

A Scheme for Latency Analysis of Different Cryptography Methods for Security in 5G Era

G. Mallikharjuna Rao
 Department of ECE
 Chaitanya Bharathi Institute of Technology
 Osmania University
 Hyderabad, India
 mallikharjunag@gmail.com

K. Deergha Rao
 Department of ECE
 Vasavi College of Engineering
 Osmania University
 Hyderabad, India
 korraidrao@yahoo.com

Abstract—In this paper, we present a scheme for performance analysis of different cryptography methods namely symmetric ciphers, and asymmetric ciphers to encrypt and decrypt the text, and audio data for online secure data access in the browser window using LabVIEW approach on myRIO hardware module for 5G systems. In this work, the text message with the different payloads is encrypted and decrypted. Similarly, the same process repeated for audio data. First, the text, and audio data are converted into string format; then the data format is encrypted using different cryptography methods from the sender side. On the receiver side, same cryptography method is used to decrypt the data with a generated key associated among the parties. In the case of symmetric ciphers, AES, Blowfish, DES, and IDEA are used to encrypt and decrypt the data. Further, the asymmetric ciphers, RSA, ECC, and DSA are used to encrypt and decrypt the data. LabVIEW programming tools are used to develop a scheme of cryptography methods. Finally, latency analysis is made on text, and audio data with symmetric and asymmetric ciphers.

Index Terms—Symmetric ciphers, AES, Blowfish, DES, IDEA, asymmetric ciphers, RSA, ECC, DSA

I. INTRODUCTION

The Pervasive computation process in the 5G era plays a crucial role to understand data security [1]. The Cryptography methods, namely symmetric and asymmetric ciphers, are used for encryption and decryption on text, and audio data by sharing a private and public key between the sender and receiver. When selecting a cryptography algorithm for 5G user case, low area, low power, and low latency options are to be considered. The first two terms are to be considered for area and power constrained applications. Certain applications are more effected by latency rather than throughput, such applications require low latency. The latency is to be considered for applications that require low latency. The fifth generation (5G) communications have to support a multitude of services. The URLLC (ultra-reliable low latency communications) is one of the services to be supported by 5G. URLLC transmission, that requires a short information block lengths at low code rates with a low BLER (block error rate) at low error flows. URLLC is required for ultra-reliable and latency-sensitive applications and services. In contrast to the current communication systems that are modeled for human-to-human (H2H) interactions,

URLLC aim to human-to-machine (H2M) [2] interactions and high reliable machine-type interactions such as telesurgery, factory automation, autonomous vehicles, tactile internet, and remote control. All of these applications have the most strict requirements on low latency, which cannot be accomplished in Long-Term Evolution (LTE) systems. However, the performance analysis of different cryptography methods based on audio files for low latency applications is lacking in literature. Therefore, in this paper, a scheme is proposed for comparative timing analysis of various cryptography algorithms using LabVIEW.

II. PROPOSED SCHEME

The block diagrams of the proposed schemes based on symmetric ciphers and asymmetric ciphers are shown in Figs.1 and 2, respectively.

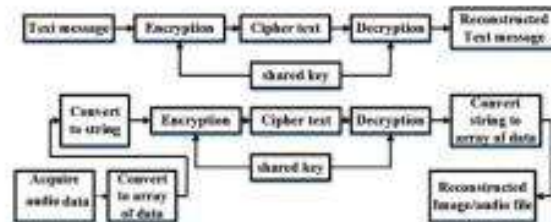


Fig. 1. Block diagram of symmetric ciphers on text, and audio signals

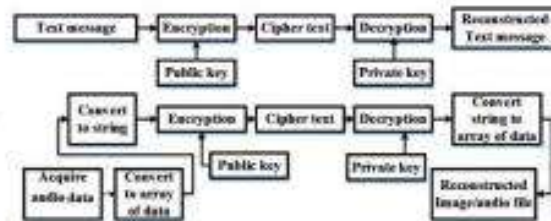


Fig. 2. Block diagram of asymmetric ciphers on text, and audio signals

The text message is encrypted with the shared key, and then converted into a ciphertext; again at the receiver, it is

Low Cost IoT Based Emission Monitoring System for Thermal Power Plants

Ayesha Samreen
Student B.E., II SEM, Dept. of ECE
Chaitanya Bharathi Institute of
Technology
Hyderabad, India
ayesha.samreen0504@gmail.com

P. Sathish
Assistant professor, Dept. of ECE
Chaitanya Bharathi Institute of
Technology
Hyderabad, India
psathish_eee@cbit.ac.in

N. Alivela Margn
Associate professor, Dept. of ECE
Chaitanya Bharathi Institute of
Technology
Hyderabad, India
namang09@gmail.com

Abstract— Nowadays, Internet of Things (IoT) has turn out to be a part of an Embedded system for controlling and monitoring purposes. Monitoring of gases produced by thermal power plants is very much essential to mitigate their impact on the environment like air pollution also, to prevent health hazards to human beings. In this paper, an attempt is made to design IoT based Embedded application, a prototype, which is specifically developed for monitoring toxic gases released by thermal power plants. This system measures the concentration levels of Carbon Monoxide (CO), Particulate Matter (PM) released by thermal power plants. Various sensors are used to measure the concentration levels of the gases. Node MCU is used, to read data from the sensors and send it to the cloud using ESP8266 module. The data can be monitored by the environmental agency, either by using web application (Thingspeak) or mobile application (Blynk app). If the measured data is greater than the emission standards, an email notification is send to the Power Plant agency and they may initiate to limit the toxic emissions.

Keywords— Internet of Things, Sensors, ESP8266, NodeMCU

I. INTRODUCTION

Air pollution is the major concern nowadays. It is causing serious effects on human health, animals, environment etc. it can be caused by nature (volcanic eruptions) and human activities (industries). Percentage cause of air pollution due to nature is less than the cause of air pollution by human activities. Air pollution challenges facing today include: limiting climate change, reducing risk from toxic air pollutants, meeting health based standards for common air pollutants and protecting the stratospheric ozone layer against degradation [1]. Today, Industries and automobile vehicles are the major cause for air pollution. World Health Organization (WHO) says, ambient air pollution accounts for an estimated 4.2 million deaths per year due to stroke, heart disease, lung cancer and chronic respiratory diseases. Around 91% of the world's population lives in places where air quality levels exceed WHO limits. While ambient air pollution affects developed and developing countries alike, low- and middle-income countries experience the highest burden, with the greatest toll in the WHO Western Pacific and South-East Asia regions [2]. Adverse health consequences to air pollution can occur as a result of short- or long-term exposure. The pollutants with the strongest evidence of health effects are Particulate Matter (PM), Ozone (O₃), Nitrogen dioxide (NO₂), Sulphur dioxide (SO₂), Carbon monoxide (CO), Carbon dioxide (CO₂) [3]. To limit the emission of these pollutants in air caused by industries, WHO working with countries to monitor air pollution and

improve air quality by setting emission standards and guidelines to industries [4]. Since Monitoring of air quality plays a major role in improving the air quality, the new emerging technologies can be used for monitoring, like Internet of Things with sensors. Internet of things has become the trending technology nowadays, since it connects the devices. It can be used as a system, which connects various computing devices, mechanical and digital machines, objects, to develop specific application. It has the ability to transfer data over a network without requiring human-to-human or human-to-computer interaction [5]. Hence, it is widely used in various applications such as emission monitoring system.

Thus, in this paper a prototype is designed that can be implemented in real world which is of low cost. System uses NodeMCU, which is an open source platform of IOT. By using it, dust sensor (PM2.5) and carbon monoxide (MQ7) is used for measuring the dust particles and CO composition emission by power plants. Thingspeak and Blynk mobile app is used for data display and monitor purpose. An email notification will be send to the client if the CO and PM levels are above threshold values by using If This, Then That (IFTTT) notification service.

Section II says about the related work has been done for air quality monitoring. Section III gives the brief description of the system architecture and Section IV explains about the different hardware and software components which are used in system. Section V shows the experimental setup and the relevant results and discussions. Conclusion is seen in section VI.

II. RELATED WORK

An air pollution monitoring system is introduced in which Nucleo F401RE is used to read data from the sensors and Wifi module for sending the data to application [6]. Raspberry pi 3 is used as a gateway and base station. It receives data, stores it. Using Mean stack data visualization is done. In [7] air quality monitoring system is developed which uses NodeMCU for controlling and it uses DHT11 sensor for temperature and humidity measuring, MQ-135 for measuring smoke, gases and other sensors. In this, NodeMCU acts as publisher for Message Queuing Telemetry Transport (MQTT) broker and NodeRED as subscriber. Node red is used for data receiving purpose as well as data display by using NodeRED dashboard. If the

Augmentation of NavIC with BeiDou-2 Over Indian Region

Sudershan Reddy Kotla
Department of Electronics and
Communication Engineering
Chaitanya Bharathi Institute of
Technology
Hyderabad, India
kotla66@yahoo.com

Sarmadha Fahmeen
Department of Computer Science and
Engineering
Sharda Women's College of
Engineering and Technology
Hyderabad, India
sarmadha09@gmail.com

Quddusa Sultana
Department of Electronics and
Communication Engineering
Deccan College of Engineering and
Technology
Hyderabad, India
quddusas@gmail.com

D Krishna Reddy
Department of Electronics and
Communication Engineering
Chaitanya Bharathi Institute of
Technology
Hyderabad, India
dkreddy@cbit.ac.in

Abilash Reddy Kondaiah
AutoNation, Fort Lauderdale
Florida, US
abilash2242@gmail.com

Abstract—This paper focuses, initially, on the study of satellite visibility of augmented NavIC with BeiDou-2. Comparative analysis of NavIC and NavIC augmented with BeiDou-2 is also performed in terms of Dilution of Precision (DOP). DOP is a term used in satellite navigation to stipulate the supplementary multiplicative result of navigation satellite geometry on positional measurement precision. The augmentation has caused improvement in the satellite visibility and DOP.

Keywords—BeiDou-2, NavIC, Satellite Visibility, DOP

I. INTRODUCTION

Today, multiple constellations of navigation satellites from the U.S, Russia, China and Europe orbit the Earth, providing numerous location-based services for consumers, businesses, militaries and civil aviation. With the launch of India's IRNSS in orbit, India now has an operational regional satellite navigation service developed by Indian Space Research Organization (ISRO) to meet its security requirements since 2016, and updated in April, 2018 [1] [2]. IRNSS is also known as Navigation with Indian Constellation (NavIC). NavIC provides an absolute position accuracy of better than 10m throughout Indian landmass and better than 20m in the Indian Ocean.

Though NavIC is expected to provide navigation services with sufficient accuracy, its accuracy can be enhanced through a technique called augmentation. For augmentation, other satellite navigation systems visible over India can be taken into consideration. This paper focuses on the augmentation of NavIC with BeiDou-2.

The BeiDou System (BDS) is a Chinese satellite navigation system. It is been developed in three phases [3]. The first phase was for experimental purpose, called BeiDou-1 (since 2000) had only 3-4 satellites. It was decommissioned in 2012 [4]. The second phase is named BeiDou-2 also called as COMPASS. It is a regional system and become operational in 2011 with a constellation of 10 satellites. Since December 2012, it has been offering services to navigators in the Asia-Pacific region [5].

II. OVERVIEW OF NAVIC AND BEIDOU-2

NavIC provides two levels of service, the Standard Positioning Service (SPS) for open use and a Restricted Service (RS) for authorized users. The space segment of NavIC consists of a constellation of seven satellites [1], orbiting around the earth at an altitude of around 36,000 km. The satellites are launched at various locations to provide navigation primarily over India. Three satellites are placed in Geostationary Orbit (GEO) and four satellites are placed in Geosynchronous Orbits (GSO). Satellites in GSO are inclined at an angle of +29° with the equator. Due to this inclination, they provide coverage to the higher and lower latitudes near the poles [6].

BeiDou-2 provides two levels of services, a free service to civilians and licensed service to the Chinese government and military. The free civilian service has a 10m location-tracking accuracy. Clocks have an accuracy of 10 ns, and provide speed within 0.2 m/s error. The restricted military service has a location accuracy of 10 cm [7]. Presently, the BeiDou-2 constellation consists of 19 satellites. By 2020, the BeiDou orbital constellation will include 35 satellites [8].

III. ESTIMATION OF SATELLITE VISIBILITY

To find the number of satellites (SVs), visible from a given point on earth, the sub-satellite point (P) on the ground should be taken into consideration. Assuming 'R' to be the radius of the earth, i.e., 6371km approximately, arc-length d_{PQ} to be the radius of coverage area, on the surface of the earth and arc-length d_{PQ} be the arc-distance between the sub-satellite point (P) and the user (Q). Let the co-ordinates of point P be (λ_1, θ_1) and the co-ordinates of point Q be (λ_2, θ_2) . Using Haversine formula, the expression for d_{PQ} can be written as,

$$d_{PQ} = 2R \sin^{-1} \left[\sqrt{\sin^2 \left(\frac{\theta_2 - \theta_1}{2} \right) + \cos(\theta_1) \cos(\theta_2) \sin^2 \left(\frac{\lambda_2 - \lambda_1}{2} \right)} \right] \quad (1)$$

Design of an Area Efficient Braun Multiplier using High Speed Parallel Prefix Adder in Cadence

B.Neeraja

*Electronics and communication engineering
Chaitanya Bharathi Institute of Technology
Hyderabad,India*

email: bandineeraja6@gmail.com

R.Sri Prasad Goud

*Electronics and communication engineering
Chaitanya Bharathi Institute of Technology
Hyderabad,India*

email: rspgoud24@gmail.com

Abstract— Matrix multiplication is one of the most fundamental part of digital signal processing systems and is also used as a recursive routine in many signal processing and computational problems. The circuit complexity mainly depends on the multiplication count required for developing the system. Parallel array multiplier is the solution for achieving high execution speed demands. A conventional Braun multiplier includes an array of 16 AND gates, 9 Full Adders, and a ripple carry adder (RCA) in the final stage. A new design of Braun replaces RCA with Kogge-Stone Adder (KSA) for performing faster multiplication. Two designs of KSA are proposed using 14T XOR and 12T XOR gates. A conventional Braun multiplier and Braun multiplier with KSA are designed in cadence Virtuoso tool for 180nm technology with 1.8V source. It is observed that the area reduces by 258 transistors and delay is decreased by 4.65 ns.

Keywords—Digital Signal Processors (DSP), Ripple carry adder (RCA), Kogge-Stone adder (KSA).

I. INTRODUCTION

The advances made in VLSI technology both in terms of speed and size, have made possible the hardware implementation of parallel multipliers. The growth of technology further ensures enhanced performance characteristics and widespread use in DSP systems. It performs such operations as accumulating the sum of multiple products much faster than an ordinary microprocessor. The DSP architecture is so designed that it performs parallel operation and thus reduces the computational complexity and enhances the speed for repetitive signal processing required for such applications.[1]. These features are designed in the programmable DSP to higher speed and throughput. For a given application, there is a large number of programmable DSPs to choose from, based on such factors as speed, throughput, arithmetic capability, precision, size, cost and power consumption [2]. The advent of single-chip multipliers and their integration into microprocessor architecture is the

most important reasons for the availability of commercial VLSI chips capable of DSP functions. These multipliers are called parallel or array multipliers [3]. Generation of product of two binary numbers requires a single processor cycle. Earlier, either a software based shift and add algorithm or one using micro-coded controllers, which implement same algorithm in hardware were used as popular multiplication schemes. Both these options require several processor cycles to complete multiplication. Kogge-Stone Adder (KSA) is a design of parallel prefix adders using XOR and AND gates [5],[6]. Conventional multipliers designed with 22T XOR or 16T XOR gates. 3T XOR, 6T XOR and 10T XOR models are already available but these have the problem of threshold loss [7],[8].12T XOR gate is preferred for current design of KSA, that gives full swing output[9]. In this work, Braun Multiplier with Kogge-Stone Adder is used for decreasing the area and delay.

II. CONVENTIONAL BRAUN MULTIPLIER

Braun multiplier is built conventionally in CMOS technology. All the basic building blocks that form the multiplier use CMOS technology. It has 16 AND gates and 12 FULL ADDERS FA1 to FA12.

Augmentation of Modernized CAPS with NavIC Over Indian Region

K Sudeshan Reddy¹, D Krishna Reddy²
*Department of Electronics and Communication Engineering
 Chaitanya Bharathi Institute of Technology
 Hyderabad, India
 ksrb@cbit.ac.in, dkreddy@cbit.ac.in*

Sameeha Fatmeem²
*Department of Computer Science and Engineering
 Shaadai Waseem's College of Engineering and Technology
 Hyderabad, India
 sameeha1990@gmail.com*

Quddusa Sultana¹
*Department of Electronics and Communication Engineering
 Deccan College of Engineering and Technology
 Hyderabad, India
 quddusas@gmail.com*

Abstract— India has developed its indigenous regional navigation satellite system called as Indian Regional Navigation Satellite System (IRNSS). IRNSS is given an operational name as Navigation with Indian Constellation (NavIC). NavIC satellite constellation is planned in such a way that at least four satellites are visible over India and 1500km outside its boundary. Satellite visibility of NavIC indicates its ability to provide navigation services. Knowledge of satellite visibility is vital as it is a significant parameter to analyze the accuracy of the user position. Moreover, to increase user position accuracy, the NavIC can be supplemented with other navigation satellite systems, such as Global Positioning System (GPS) of US, Global Navigation Satellite System (GLONASS) of Russia and Chinese Area Positioning System (CAPS) of China. The CAPS is a regional navigation satellite system developed by National Astronomical Observatories of China (NAOC). This paper focuses, initially, on the analysis of satellite visibility of standalone CAPS, over India. Eventually, satellite visibility of augmented CAPS with NavIC is paid attention. Comparative analysis of CAPS and CAPS augmented with NavIC is also performed in terms of Dilution of Precision (DOP). DOP is a factor which indicates the accuracy of the user position. The augmentation has caused improvement in the satellite visibility and DOP.

Keywords—CAPS, NavIC, Satellite Visibility, DOP

I. INTRODUCTION

GPS has been considered as a sufficiently good navigation satellite system by the whole world. However, one's nation's security requirements demand independent navigation systems. In this respect, Indian Space Research Organization (ISRO) of India has developed its indigenous navigation satellite system called Indian Regional Navigation Satellite System (IRNSS) and is operational since 2016, and updated in April, 2018 [1] [2]. IRNSS is also known as Navigation with Indian Constellation (NavIC). NavIC provides military as well as civil services.

Though NavIC is expected to provide navigation and guidance with good accuracy, its accuracy can be enhanced through a technique called augmentation. For augmentation, other satellite navigation systems visible over India can be taken into consideration. This paper focuses on the augmentation of CAPS with NavIC.

CAPS is a passive one-way navigation satellite system of China. CAPS development was initiated in 2002 based on a proposal by National Astronomical Observatories of China (NAOC), Chinese Academy of Science (CAS) [3].

II. OVERVIEW OF NAVIC AND CAPS

The NavIC has three segments. They are space segment, ground segment and user segment. Ground segment basically comprises of a Mater Control Station, Monitoring stations and transmitting antennas. The space segment has a constellation of seven satellites (Table 1), orbiting around the earth at an altitude of around 36,000 km. The satellites are launched at various locations to provide navigation anywhere over India, and its neighboring countries. Three satellites are placed in Geostationary Orbit (GEO) and four satellites are placed in Geosynchronous Orbit (GSO). Satellites in GSO are inclined at an angle of $\pm 29^\circ$ with the equator. Due to this inclination, they provide coverage to the higher and lower latitudes near the poles [4].

CAPS consists of a ground segment, a user segment and an space segment. Space segment broadcasts navigation messages, uploaded from the ground segment [5]. The CAPS constellation consists of six commercial GEO communication satellites and an Inclined GSO (IGSO) satellite [3] [6]. To modernize CAPS, two more satellites are planned in IGSO with a phase difference of 120° each as shown in Fig. 1 and Table II [6]. Further, CAPS uses the communication satellites to assimilate the navigation and communication features.

TABLE I: SATELLITE VEHICLES OF NAVIC

NavIC Satellite Locations				
SzNo	Satellites	Longit latit	Altitude(km)	Inclin angle
1.	IRNSS-1H	55°E	Perigee:35701; Apogee:35881	27.49°
2.	IRNSS-1B	55°E	Perigee:35714; Apogee:35870	30.57°
3.	IRNSS-1C	83°E	Perigee:35697; Apogee:35889	4.78°
4.	IRNSS-1D	111.75° E	Perigee:35750; Apogee:35884	30.43°
5.	IRNSS-1G	111.75° E	Perigee:35791; Apogee: 35948	28.4°
6.	IRNSS-1E	32.1°E	Perigee: 35718; Apogee: 35872	4.6°
7.	IRNSS-1F	131.3° E	Perigee: 35778; Apogee: 35905	4.7°

"IRNSS User Range Accuracy Evaluation for Receiver Autonomous Integrity"

IRNSS User Range Accuracy Evaluation for Receiver Autonomous Integrity

Publisher: **IEEE**

[Cite This](#)

[PDF](#)

D. Sony ; V. Satya Srinivas ; P. Naveen ; D. Krishna Reddy [All Authors](#)

102

Full

[Text Views](#)



Abstract

Document Sections

1. Introduction
2. IRNSS Architecture
3. Signal-In-Space Errors
4. RAIM
5. Methodology

[Show Full Outline](#)

[Authors](#)

[Figures](#)

[References](#)

Abstract:

Civil aviation is one sector that immensely will get benefited from Indian Regional Navigation Satellite System (IRNSS) services. However, for safety of life applications, integrity of navigation solution is crucial. Integrity of the system depends on Signal-In-Space (SIS) errors. The user range accuracy (URA) transmitted in navigation message for each satellite is a conservative estimate of SIS error and can be mainly used for integrity monitoring. Therefore, investigation of URA is important. Further, for development of receiver autonomous integrity monitoring algorithm for IRNSS, the typical value of URA has to be defined. In this paper, the cumulative distribution of URA is analyzed to over bound SIS errors. The sigma URE for 68% over bound is 2.8m.

Published in: 2019 URSI Asia-Pacific Radio Science Conference (AP-RASC)

Date of Conference: 09-15 March 2019

Date Added to IEEE Xplore: 20 June 2019

► ISBN Information:

INSPEC Accession Number: 18760423

DOI: 10.23919/URSIAP-RASC.2019.8738325

Publisher: IEEE

Conference Location: New Delhi, India

Feasibility of Soft Real-Time Operations Over WLAN Infrastructure-Independent IoT Implementation by Enhancing Edge Computing

11/26/22, 10:29 PM

Feasibility of Soft Real-Time Operations Over WLAN Infrastructure-Independent IoT Implementation by Enhancing Edge Comp...



Search   Log in



Data Engineering and Communication Technology pp 223–230

Feasibility of Soft Real-Time Operations Over WLAN Infrastructure-Independent IoT Implementation by Enhancing Edge Computing

[Sujanavan Tiruvayipati](#)  & [Ramadevi Yellasiri](#)

Conference paper | [First Online: 09 January 2020](#)

653 Accesses | **1** Citations

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

Abstract

The subsequent generation of IoT devices must work on a multi-protocol architecture to facilitate M2M communication along with endpoint user interfacing to solve the network infrastructure dependencies accompanied by redundant data flow overhead. An ideological solution is proposed to facilitate a change while cutting down infrastructure cost and enhancing the current setups through proper implementation of edge computation. End devices cooperate with each other along with providing GUI and Internet to

https://link.springer.com/chapter/10.1007/978-981-15-1097-7_19

1/8

Telangana, India

Dr. V. Rajagopal

Rights and permissions

[Reprints and Permissions](#)

Copyright information

© 2020 Springer Nature Singapore Pte Ltd.

About this paper

Cite this paper

Tiruvayipati, S., Yellasiri, R. (2020). Feasibility of Soft Real-Time Operations Over WLAN Infrastructure-Independent IoT Implementation by Enhancing Edge Computing. In: Raju, K., Senkerik, R., Lanka, S., Rajagopal, V. (eds) Data Engineering and Communication Technology. Advances in Intelligent Systems and Computing, vol 1079. Springer, Singapore. https://doi.org/10.1007/978-981-15-1097-7_19

[.RIS](#) [.ENW](#) [.BIB](#)

DOI

https://doi.org/10.1007/978-981-15-1097-7_19

Published	Publisher Name	Print ISBN
09 January 2020	Springer, Singapore	978-981-15-1096- 0

Online ISBN	eBook Packages
978-981-15-1097- 7	Intelligent Technologies and Robotics

Recommended System For Wellness Of Autistic Children Using Data Analytics and Machine Learning

Kusumalatha Karre¹, Dr. RamaDevi.Y²

¹Research Scholar, Department of Computer Science and Engineering, Osmania University and Assistant Professor, Department of Electronics and Computer Engineering, Sreenidhi Institute of Science and Technology, Hyderabad

²Professor, Department of Computer Science and Engineering, Chaitanya Bharathi Institute of Technology, Hyderabad

Abstract: Autism is a mental condition which hinders social and communication skills. It's a lifelong disability which makes the child's day to day life very difficult. But in most of the cases early intervention has helped the children to develop the skills which are needed to the fullest to overcome autism. As early the intervention, better the development of the child. Most of the research has been carried out to detect the autism using various machine learning algorithms which consider autistic diagnostic tools such as ADI-R, ADOS or CARS. Once autism is detected, different areas which need to be developed are considered and recommendations are given to the child. In this paper, a system is proposed which uses multi dimensional data collected from facp, DST and Diet to perform analytics using machine learning and provide recommendations to the child.

Keywords: Autism, Functional Assessment Checklist for Programming (facp), Developmental Screening Test (DST), Diet.

1. Introduction

Autism is a spectrum condition which hinders with the daily activities. The child will not be able to communicate properly, lack of fine motor skills and poor eye contact. They will be more interested in rotating objects such as fans, wheels etc. It's a lifelong disability but the early intervention plays a major role. If the disease is detected early, the child can develop the skills required and overcome the symptoms of autism. Most of the research has been carried out to detect autism is in the direction of developing machine learning algorithms which uses autistic diagnostic tools such as ADI-R, ADOS and CARS to check the accuracy of the machine. But there can be other factors which can be the cause for the existing condition. So, In this paper we are considering multi dimensional data collected from facp, DST and Diet to do the analysis. The rest of the paper is organized as follows: Autism, Machine learning in autism, facp, DST, Diet, Recommended system, Conclusion and Future scope.

2. Autism

Autism is a spectrum condition which causes different disabilities such as lack of communication skills, social skills and fine motor skills. The symptoms include unable to utter a word by the age of 2, not responding to name calling, strict compulsion of daily routine, repetitive movements like head banging, spinning, and hand flapping, no sitting tolerance, not aware of danger, and echolia. The child will be assessed by the pediatrician during their regular visit and if any of the symptoms are found will be referred to the experts. The psychologists will examine the child behavior and use various screening tools like Ages and Stages Questionnaires (ASQ)(1 month to 5.6 years), Communication and Symbolic Behavior Scales (CSBS)(6 months and 24 months), Parents' Evaluation of Developmental Status (PEDS)(birth to 8 years), Modified Checklist for Autism in Toddlers (MCHAT)(16 to 30 months of age), Screening Tool for Autism in Toddlers and Young Children (STAT) (24 and 36 months of age) to initially check for the

Viability of uncomplicated IoT SaaS Development for Deployment of DIY applications over HTTP with Zero Investment

11/26/22, 10:31 PM

Viability of an Uncomplicated IoT SaaS Development for Deployment of DIY Applications Over HTTP with Zero Investment | Sp...



Search Log in



Advances in Decision Sciences, Image Processing, Security and Computer Vision pp 206–213

Viability of an Uncomplicated IoT SaaS Development for Deployment of DIY Applications Over HTTP with Zero Investment

[Sujanavan Tiruvayipati](#) & [Ramadevi Yellasiri](#)

Conference paper | [First Online: 13 July 2019](#)

581 Accesses

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

Abstract

IoT administrations are ordinarily conveyed of IoT as physically disconnected vertical arrangements, in which all framework segments running from tangible gadgets to applications are firmly coupled for the prerequisites of each explicit venture. The productivity and versatility of such administration conveyance are naturally constrained, presenting noteworthy difficulties to IoT arrangement developers. In this context, we propose a novel SaaS structure that gives basic stage administrations to IoT

https://link.springer.com/chapter/10.1007/978-3-030-24322-7_27

1/9

Dr. Margarita N. Favorskaya

Rights and permissions

[Reprints and Permissions](#)

Copyright information

© 2020 Springer Nature Switzerland AG

About this paper

Cite this paper

Tiruvayipati, S., Yellasiri, R. (2020). Viability of an Uncomplicated IoT SaaS Development for Deployment of DIY Applications Over HTTP with Zero Investment. In: Satapathy, S.C., Raju, K.S., Shyamala, K., Krishna, D.R., Favorskaya, M.N. (eds) *Advances in Decision Sciences, Image Processing, Security and Computer Vision. Learning and Analytics in Intelligent Systems*, vol 3. Springer, Cham. https://doi.org/10.1007/978-3-030-24322-7_27

[.RIS](#) [.ENW](#) [.BIB](#)

DOI

https://doi.org/10.1007/978-3-030-24322-7_27

Published	Publisher Name	Print ISBN
13 July 2019	Springer, Cham	978-3-030-24321-0

Online ISBN	eBook Packages
978-3-030-24322-7	Intelligent Technologies and Robotics

A novel framework for quality of service aware vertical handover process in heterogeneous wireless networks

IOP Conference Series: Materials Science and Engineering

PAPER • OPEN ACCESS

A novel framework for quality of service aware vertical handover process in heterogeneous wireless networks

To cite this article: P Pramod Kumar et al 2020 IOP Conf. Ser.: Mater. Sci. Eng. **981** 022019

View the [article online](#) for updates and enhancements.

You may also like

- [Enhanced Security and Ping-pong free Handover Authentication Scheme for Mobile Wireless Networks](#)
Rui Chen, Guangqiang Shu, Peng Chen et al.
- [Ping-pong reduction for handover process using adaptive hysteresis margin: a methodological approach](#)
A A Adewale, E E Ekong, F A Ibikunle et al.
- [Optimized Adaptive Handover with Based on Type of Service for Densely Femtocell Networks](#)
Chen Cheng and Xueyang Yu



ECS The Electrochemical Society
Advancing solid state & electrochemical science & technology

243rd ECS Meeting with SOFC-XVIII

More than 50 symposia are available!

Present your research and accelerate science

Boston, MA • May 28 – June 2, 2023

[Learn more and submit!](#)

This content was downloaded from IP address 103.152.185.226 on 26/11/2022 at 17:04

A novel framework for quality of service aware vertical handover process in heterogeneous wireless networks

P Pramod Kumar¹, K Sagar², G Ranadheer Reddy³, S Shwetha⁴ and V Pranathi⁵

¹School of Computer Science and Artificial Intelligence, SR University, Warangal, Telangana, India

²Department of Computer Science and Engineering, Chaitanya Bharathi Institute of Technology, Hyderabad, Telangana, India

^{3,4,5}Department of Computer Science and Engineering, Sumathi Reddy Institute of Technology for Women, Warangal, Telangana, India

E-mail: pramodpoladil11@gmail.com

Abstract. The evolution of wireless communication technology and the growing number of mobile users with various applications together have formed a heterogeneous environment of wireless communication networks with real-time availability and high bandwidth preferences. Everyone in the world wants consistent mobility to connect seamlessly to the best available network anytime and anywhere. Therefore, an efficient and Quality of Service (QoS) aware Vertical Handover (VHO) techniques are needed when the mobile connections have to switch from one network to another network to provide effective mobility performance, seamless connectivity, and high availability of connections. Applying efficient VHO process in a heterogeneous wireless network is still a big topic of interest in research field. It has been observed that existing handover techniques are not much capable of providing user preference and QoS aware mobile communication and network selection process. This problem incorporates various unwanted factors such as communication delay, inconsistent mobility, security towards the communication process. This paper discusses various existing research works that have been carried out to improve the VHO process to boost overall communication performance and to raise QoS of wireless mobile communications in the heterogeneous networks.

Keywords: wireless communication, vertical handover, heterogeneous networks, quality of service.



Web of Things an intelligent approach to solve interoperability issues of Internet of Things communication protocols

IOP Conference Series: Materials Science and Engineering

PAPER • OPEN ACCESS

Web of Things an intelligent approach to solve interoperability issues of Internet of Things communication protocols

To cite this article: V. Thirupathi and K. Sagar 2020 *IOP Conf. Ser.: Mater. Sci. Eng.* **981** 032094

View the [article online](#) for updates and enhancements.

You may also like

- [Building a Semantic RESTful API for Achieving Interoperability between a Pharmacist and a Doctor using JENA and FUSEKI](#)
T. Sigwele, A. Naveed, Y.F. Hu et al.
- [Level Assessment Criterion and Method for C-ISR Systems Interoperability](#)
Wang Shuang-ling
- [Interoperability: A Challenge for IoMT](#)
Gausiya Yasmeen, Nashra Javed and Tasneem Ahmed

ECS The Electrochemical Society
Advancing solid state & electrochemical science & technology
243rd ECS Meeting with SOFC-XVIII
More than 50 symposia are available!
Present your research and accelerate science
Boston, MA • May 28 - June 2, 2023
[Learn more and submit!](#)

This content was downloaded from IP address 103.152.185.226 on 26/11/2022 at 17:06

Web of Things an intelligent approach to solve interoperability issues of Internet of Things communication protocols

V. Thirupathi^{1,2} Dr K. Sagar³

¹Research Scholar, OU

²Dept of CSE, S R University, Warangal, Telangana, India

³Dept of CSE Chaitanya Bharathi Institute Technology, Hyderabad, Telangana, India

Email: v.thirupathi@sru.edu.in

Abstract. Internet of Things (IoT) is an emerging technology now in a days. It allows each and every physical thing to communicate with each other through internet. To establish communication among physical things they require some communication protocols like hypertext transfer protocol (http). But these devices have constrained computational resources like RAM and processor speed. Due to constrained resources they cannot able to communicate using http. So they require special communication protocols like CoAP, MQTT and AMQP. Various manufactures can build their products using their proprietary architectures and communication protocols, when they try to communicate problems raised due to proprietary architectures and protocols. This is called interoperability problem. To solve this problem we propose a solution using Web of Things (WoT), WoT enables each and every device can connect to a server as web pages. So that we can access any device through web using internet as simple as we access web pages.

1. Introduction

Internet of Things (IoT) [8] enables every device (Thing) to communicate with each other through internet. Every device/thing has a sensor node which is capable of gathering data, processing and transferring to other nodes with the help of sensors, actuators and communication protocols. Different vendors manufacture variety of devices by using their proprietary architectures and communication protocols. Due to different architectures and communication protocols, devices cannot establish successful communication with other devices. IoT devices have less computational resources like Random Access Memory (RAM) and processor speeds. So they require special protocols at each layer. For instance, 6LowPAN being used at network layer, TCP/UDP at transport layer and COAP/MQTT at application layer.

IoT reference model uses CoAP, MQTT, AMQP, XMPP and DDS protocols at application layer to transfer messages among different devices as communication protocols. If a sender wants to send a message using CoAP protocol, receiver wants to receive using MQTT protocol then communication problem will be raised due to heterogeneity between sender and receiver protocols.

Web of Things (WoT) defines an established group of principles by the W3C consortium to solve the interoperability problems of various IoT (Internet of Things) applications at different levels. Web of Things enables every physical thing to be added to a server. So that it can be accessed from



Content from this work may be used under the terms of the [Creative Commons Attribution 3.0 licence](https://creativecommons.org/licenses/by/3.0/). Any further distribution of this work must maintain attribution to the author(s) and the title of the work, journal citation and DOI.

Published under licence by IOP Publishing Ltd

Detection of Military Targets from Satellite Images using Deep Convolutional Neural Networks

Harika Bandrupally¹
Student, Computer Science and Engineering
Chaitanya Bharathi Institute of Technology
Hyderabad, India
bandarupallyharika@gmail.com

Harshitha Reddy Talusani¹
Student, Computer Science and Engineering
Chaitanya Bharathi Institute of Technology
Hyderabad, India
harshitha.reddy3599@gmail.com

Dr. T Sridevi²
Associate Professor, Computer Science and
Engineering
Chaitanya Bharathi Institute of Technology
Hyderabad, India
tsridevi_cse@cbit.ac.in

Abstract—Due to the varying size, orientation, and background of images in the defense sector, it is a daunting task to discern and distinguish the military targets in them. Multitudes of solutions have been proposed in this arena, yet there is a significant need for much better and flawless outputs. In this chapter, we expound on a two-level solution –Edge Boxes and Convolutional Neural Network (CNN) for the detection of targets in satellite imagery, Super resolution of the image using Dense-skip-connections. In the first level, the military objects are detected from the satellite image using Edge Boxes. In satellite imagery, the edge data of targets contains very prominent and concise attributes. The traditionally engineered features such as Histogram of Oriented Gradients, Hough transform and Gabor feature do not work well for huge datasets. However, the Edge Boxes technique generates contours around the target objects and discards the remaining. The output of this level is fed to the second level, wherein, the proposed targets undergo image super resolution. The presented deep learning model tends to inherently learn an end-to-end mapping between images of lower resolution and higher resolution. This level can be portrayed as one which takes a low-resolution input image and constructs an up-sampled high-resolution image as the output. Unlike traditional methods (sparse coding based method, bicubic method) that handle each component separately, this method aims to optimize all the layers at once. Furthermore, for assuaging the vanishing gradient problem that is common to very deep networks, Dense-skip-connections are employed. These enable the building of shorter paths directly within multiple layers. Though the proposed model has a light weighted structure, it exhibits state-of-the-art restoration quality.

Keywords— Super resolution of image, Dense-skip-connections, EdgeBoxes, Deep CNN, HOG, Gabor feature, Hough transform.

I. INTRODUCTION

Detection of target patches such as aircraft, tankers, artillery, etc. in satellite images is extremely important in military applications like surveillance and security where these applications require accurate identification and tracking of vehicles. Due to these intricacies, it has become an active research topic in computer vision. Because of different size, orientation and background of the target object, it often becomes a significant challenge to detect the military vehicles and differentiate them from non-military vehicles. Identifying individual target patches from the image would be difficult and the results might be ambiguous due to the

size and resolution of the image. Hence, it becomes important to super-resolved the image to get better results. Diverse fields like medical image processing, remote sensing pose in numerous technically challenging use cases that make it necessary to achieve super resolution imaging. For image classification, convolutional neural networks have become state-of-the-art models and are regarded as one of the potential solutions for image super-resolution. Recently, convolutional neural networks classify objects with many clear or slightly blurred images with around 90 percent classification rates, even if there are variable-sized images [1]. Usually, large datasets are required for training. In this chapter, we address vehicle identification and recognition for imaging in defense applications. We propose the use of EdgeBoxes algorithm for extracting individual aircraft patches from the satellite image and a deep CNN model using dense skip connections for image super-resolution of the aforementioned patches.

II. RELATED WORKS

Satellite imagery has a very high significance in military applications. Various techniques and features have been proposed to date for automatic target detection in satellite imagery. There are several traditionally engineered models such as Histogram of oriented gradients, Hough transform, Gabor feature, etc. They tend to produce inaccurate results for huge data of low resolution. Computationally efficient and robust systems are required that can learn presentations from massive satellite imagery. Zhang et al [2] developed a hierarchical algorithm based upon the Adaboost classifier. This approach entails the use of HOG and Depth-First-Search (DFS) to detect the targets.

Another hierarchical classification algorithm is proposed by J.W Hsieh et al in [3]. This approach includes several image pre-processing techniques to remove the variations in the input image. It then employs a booting algorithm and uses the area feature to identify the targets.

[4] Proposes a method based on graph search strategy and improved Hough Transform for the detection of oil tanks in satellite imagery. In [17] symmetric properties of oil tanks are leveraged for their detection. In [5] Gabor filter was

Poisson and Logistics Regression Analysis on Electromagnetic Field Radiation: A Case of Environmental Pollution in Healthcare

Iyyanki Muralikrishna¹ and Prisilla Jayanthi^{2*}

Former Professor, JNTUH Hyderabad, India

Abstract

The universal study reveals that Electromagnetic Frequency (EMF) exposure is upsetting the environment. It focuses keenly on the people residing in the neighboring of the base stations / mobile towers were affected by environmental radiation pollution. The effect of EMF radiation on human life is unusually increasing on day-to-day basis. As the number of customers using mobiles rises, one would see the mobile phone towers / base trans-receiver station (BTS) increases; and this has a great and huge impact on radiation hazards. Mobile phones have the capability of emitting radiations that would affect human tissues and it runs a two-way communication paradigm. Radio Frequency (RF) wave establishes communication around the globe in the mobile network. However, the radiations emitted by RF waves are harmful if absorbed into the human tissues. The most side effects experienced when nearer to these towers are headaches, discomfort, anxiety and other diseases. The radiation hazards are found to be extraordinarily more where the cell towers were installed nearer to educational institutes, healthcare and few residential areas. They were recommended to move / stay away from such areas, the radiations can cause tumors, disturbance of the nervous system and other diseases. The study is to understand the radiation exposure limits that would protect the public health from the EMF exposure. RF radiations were mapped by geographic information system (GIS) based measuring approach that helps in detecting places where users are in health hazards in exposed areas. This helps government and health organization to estimate the distribution of radiation in areas nearer to the location of mobile towers. Realization among the people was made to live and spend less time based on the radiation levels of exposure with the mobile towers. The analysis was carried out by STATA software to measure the poisson exposure of confidence interval. The poisson regression calculated for the mobile towers is 47473.38 and -0.00001 for Andhra Pradesh state respectively. Similarly, the poisson exposure is 19.2096 and CI is found to be 0.0013 to 0.2900 in Telangana state of India.

Corresponding author: Prisilla Jayanthi, Former Professor, JNTUH Hyderabad, India, Email: prisillaj28@gmail.com

Received: December 20, 2019, **Accepted:** December 23, 2019, **Published:** December 31, 2019

Keywords: Poisson Regression, Logistics Regression, Geographical Information System, Electro Magnetic Field, Radiation, Mobile Towers.

Introduction

The mobility location-based service includes three components, namely Geographic Information System (GIS) technology, position tracking, and visualization. Two ever reliable techniques for identifying and locat-

ing various EMF radiation sources are Global Positioning System (GPS) and GIS. GIS-based approach is that which a user utilizes and mobile tower locations to detect the exposure area. The factors that influenced the exposure level includes the frequency of the radiation,

Emotion Analysis in Text using TF-IDF

Varun Sundaram
Department of Computer Science and
Engineering
Chaitanya Bharathi Institute of
Technology
Hyderabad, India
vaasha99@gmail.com

Saad Ahmed
Department of Computer Science and
Engineering
Chaitanya Bharathi Institute of
Technology
Hyderabad, India
saad_a1999@yahoo.com

Shaik Abdul Muqtadeer
Department of Computer Science and
Engineering
Chaitanya Bharathi Institute of
Technology
Hyderabad, India
afraz99@gmail.com

R.Ravinder Reddy
Department of Computer Science and
Engineering
Chaitanya Bharathi Institute of
Technology
Hyderabad, India
rravinderreddy_cse@cbit.ac.in

Abstract—A myriad of the population has adapted to the evolving technology, which includes text communication. Users advertently or inadvertently share emotions. As we know, emotions are one of the most critical aspects of human life; they impact human's behavior, thinking, compelling of action, and most important, decision making. There are many alleged emotions known to us, and each having its significance. In this era of modern technology, it is hard to find any unexplored area; this applies to emotion. People express their emotions through text a lot nowadays, which has led the Emotion Recognition as an important research area. Extracting emotion is a very complicated task. This paper shows a new approach to detect emotion based on TFIDF, and it is a measure that reflects the value a word holds in a document. In this method, emotion is classified into six types. There are other researches on the simple distinction between positive and negative emotion, but this does not add much to understanding human emotion. Emotion is extracted from different sentences, and data representation is based on semantic structure. It generalizes each sentence into six major predefined emotion sets. The evaluation shows that this method is well accomplished to categorize a sentence into different emotion categories and with a reasonable accuracy rate.

Keywords—TF-IDF, Random Forest Classifier, Emotion Recognition

I. INTRODUCTION

The process of identifying human emotion is known as emotion recognition. It is vital for the human to human communication in daily life. People often use social media applications to share their emotions and feelings with others. Recognizing an emotion has always been a major challenge both for humans as well as machines. Often it is found that people may fail to recognize their own emotions at a certain instance. Ekman [1] classified emotions into six types: anger, fear, disgust, joy, surprise, sadness. Earlier, people used to express themselves using face to face interaction, but now most people have started using technologies to express themselves. These include the emergence of social media applications. Artificial Intelligence has always been tireless towards solving human problems and also understanding them better. Eventually, AI is pushing

boundaries to obtain what is possible and efficient than ever before, so it has entered emotion analysis. Hopefully, this paper can be a minuscule contribution to this vast field of Artificial Intelligence.

Emotion detection [2] plays a key role in human-computer interaction. People express their emotions through speech, facial, and text. Much research has been done concerning facial recognition and speech recognition, but identifying a person's emotional state on looking at a person's face is missing key information. Emotions depend not only on facial expression but also on the present situation, whereas in speech recognition, the feature extraction is often complex as it consists of several acoustic time-based characteristics like amplitude, frequency, and formant.

On the contrary, emotion recognition in the text is playing a promising role in the field of AI. The primary reason behind this is the availability of an immense amount of data. An analysis done by Slick Text [3] shows that 80% of North America's total population prefers text-based communication. Text-based emotion recognition has a variety of applications. For example, suicidal prevention and depression applications detect the emotion present in the user's text. Another area where emotion detection can be used is in the recommendation system by improving a customer's perception to increase brand reputation. The government can also use it to gauge how happy its citizens are, which can be considerable input for the happiness index.

This paper aims to propose an efficient solution to the existing emotion analysis method. Furthermore, to study the problem in-depth and suggest an alternate algorithm that is logical and tends to obtain good accuracy. A dataset that consists of a set of sentences, and its corresponding emotion has been chosen. This dataset is then subjected to an algorithm that helps the machine to understand the relation between the sentence and the emotion-based on specific terms. On successful implementation of the algorithm on the dataset, emotion recognition rules are generalized. For example, consider the sentence "This is the first time I won the competition" to depict the emotion "happy." This model is tested on many sentences similar to this sentence and achieved an F score of 85%.



ICCE 2021 pp 1263–1269

Diabetic Retinopathy Classification Using Lightweight CNN Model

[Morarjee Kolla](#) & [T. Venugopal](#)

Conference paper | [First Online: 16 May 2022](#)

309 Accesses

Part of the [Lecture Notes in Electrical Engineering](#) book series (LNEE, volume 828)

Abstract

Diabetic Retinopathy (DR) is a dangerous disease nowadays, which may cause vision loss. Current deep learning models are successful in classifying different stages of DR effectively. Still, there is a memory bottleneck to deploy these models into mobile-like devices. The computational cost of existing deep learning models needs to reduce for commercial medical applications. Existing lightweight models facing challenges with parameter reduction, minimizing quantization loss, and gradient error. To combat these challenges, we proposed a lightweight

**Department of CSE, Chaitanya Bharathi Institute
of Technology, Hyderabad, Telangana, India**

Morarjee Kolla

**Department of CSE, JNTUH College of
Engineering Jagtial, Nachpally, Telangana, India**

T. Venugopal

Editor information

Editors and Affiliations

**BioAxis DNA Research Centre (P) Ltd., Hyderabad,
India**

Dr. Amit Kumar

Dynexsys, Sydney, NSW, Australia

Dr. Stefan Mozar

Rights and permissions

[Reprints and Permissions](#)

Copyright information

© 2022 The Author(s), under exclusive license to
Springer Nature Singapore Pte Ltd.

About this paper

Cite this paper

Kolla, M., Venugopal, T. (2022). Diabetic Retinopathy
Classification Using Lightweight CNN Model. In: Kumar, A.,

“Fuel oil from plastic waste”Institute of Technology (A), Hyderabad.

AdChE-2020

FUEL OIL FROM PLASTIC WASTE.

G.LokeshSai¹, I.ChaitanyaVamsi Krishna², P.Tharunesh³, Dr.B.Ganesh⁴.

1.G.LokeshSai,3rdyear, Department of Chemical Engineering, Chaitanya Bharathi Institute of Technology, Hyderabad, Telangana, India.(e-mail: lokeshsai.grandhi4@gmail.com).

2.I.Chaitanya Vamsi Krishna,3rdyear, Department of Chemical Engineering, Chaitanya Bharathi Institute of Technology, Hyderabad, Telangana, India.(e-mail: chaitanyavamsi9059@gmail.com).

3.P.Tharunesh,3rdyear, Department of Chemical Engineering, Chaitanya Bharathi Institute of Technology, Hyderabad, Telangana, India.(e-mail: tharunponukanti@gmail.com).

4.Dr.B.Ganesh, Assistant professor, Department of Chemical Engineering, Chaitanya Bharathi Institute of Technology, Hyderabad, Telangana, India.(e-mail: ganeshchem@cbit.ac.in).

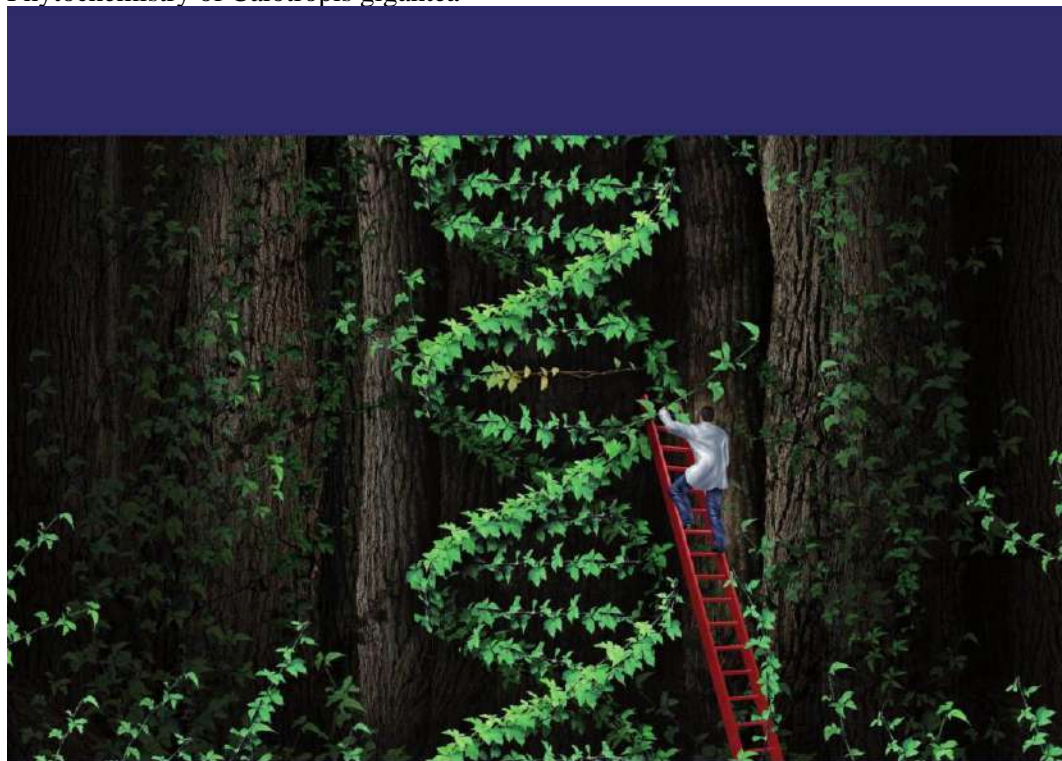
Abstract:

In Earlier days PLASTIC was a revolutionary invention which brought many changes in industrial & daily activities. But now a days, it has become a major problem as it is increasing the landfills which is leading to more pollution because of its high degradation time and no proper disposable way which is affecting the environment. The global production of plastic has shown an increase from around 1.3 MT in 1950 to 300 MT in 2010 due to the introduction of plastic in various fields. Out of the total consumption of plastic,53 % constitute polyolefins which is a large hydrocarbon. Polyethene is most consumed one i.e. 33% of total due to this it is taken into consideration.

To overcome this problem, we used Thermal Cracking i.e. Pyrolysis, it is a process which converts the large hydrocarbon chains in to small hydrocarbon chains by heating the plastic at high temperature (350 – 400°C) & the products obtained are fuel oil and non- condensable fractions. The fuel oil can be used for heating purposes and non-condensable fractions to reduce air pollution. Polythene, Polypropylene are used as they are pure hydro-carbons and burnt completely.

Key words: Alternative fuels, GCMS, CHNS and HDPE.

Electronic copy available at: <https://ssrn.com/abstract=3710529>



Obulareddy Chittepu

Phytochemistry of **CALOTROPIS gigantea**

phytochemical screening and Antimicrobial
investigation of *CALOTROPIS gigantea*.



[Back](#)



Phytochemistry of
CALOTROPIS gigantea

LAMBERT

Phytochemistry of CALOTROPIS gigantea

phytochemical screening and Antimicrobial investigation of CALOTROPIS gigantea.

LAP Lambert Academic Publishing (2019-09-05)

€ 54,90

[Buy at the MoreBooks! Shop](#)

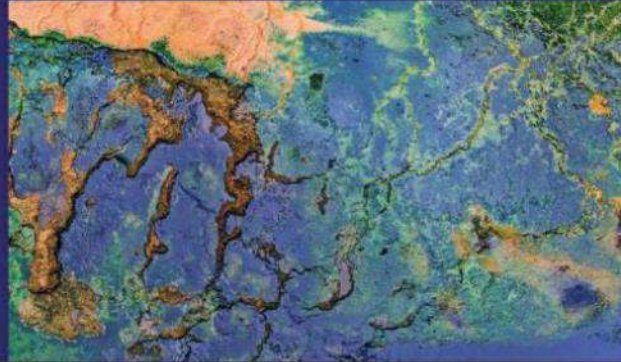
In the present era, there are rapid advancements in the fields of medical and pharmaceutical sciences. Even though there is a rapid advancement, equally there is emergence of new diseases caused by different microbial organisms. Extensive use of the existing drugs leads to emergence of antibiotic resistance pathogens. There were several reports that the pathogenic bacteria were evolving and becoming resistant to the drugs over the time. Pathogenic organisms cause many infections in human beings such as pulmonary, respiratory, cutaneous, nosocomial and several other communicable infections. Majority of the times, we observe these infections in immune deficient patients who are sensitive and more likely to be affected by these pathogens. Chemically synthesized drugs are very effective against the infectious diseases but, on the other hand, they are found to have many side effects. Therefore, there is a need to look for alternative drugs for the chemical drugs. Plants serve as major sources of potential drugs. They are bio compatible and have no side effects. Plants produce secondary also called as phytochemicals. Calotropis gigantea is one of such plant which possess medicinal properties..

Book Details:

ISBN-13:	978-620-0-29522-4
ISBN-10:	6200295220
EAN:	9786200295224
Book language:	English
By (author) :	Obulareddy Chittepu
Number of pages:	108
Published on:	2019-09-05
Category:	Microbiology

GIS-based Evaluation of Watershed Management in Medak District, India

Remote sensing is an art falling on the map of science, lying in image or an object sensing. This art can be attained through GIS mapping to a solution consists of predefined scale, generation of intelligence electrical network maps and super imposing them on the land base GIS maps. Land use is influenced by economic, cultural, political, and historical and land-tenure factors at multiple scales. It is referred to as man's activities and the various uses which are carried on land. Land cover is referred to as natural vegetation, water bodies, rock/soil, artificial cover and others resulting due to land transformation. Change detection is a difference in image prepared by digitally comparing images acquired at different time line. The grey tones are colors of each pixel record the amount of difference between the corresponding pixels. It helps in understanding the application of GIS model in identification of various land forms and other resources for effective utilization. This book entitled "A Case Study using GIS-Based Evaluation of Watershed Management Medak District, Telangana State, India" deals with the use of remote sensing in evaluating Watershed Management.



Venkateshwarlu Musini
Kandru Suresh
Srinivasa Reddy Yanala (Ed.)



Dr. M. Venkateshwarlu is Associate Professor in Dept. of Civil Engineering, CMR College of Engineering & Technology, Hyderabad. He obtained his Ph.D. degree in Applied Geo-Chemistry from Osmania University in 2009. He published 20 research papers in various national and international journals of repute.

GIS-Based Evaluation of Watershed Management in Medak District, India

GIS-Based Evaluation of Watershed Management in Medak



978-620-0-23232-8

LAP LAMBERT
Academic Publishing



Text Steganography: Design and Implementation of a Secure and Secret

Recruit researchers Join for free Login


[Home](#) > [Molecular Cell Biology](#) > [Biological Science](#) > [Cellular Processes](#) > [Secretion](#)


Chapter

Text Steganography: Design and Implementation of a Secure and Secret Message Sharing System


January 2020
DOI: [10.1007/978-3-030-24322-7_58](#)
In book: *Advances in Decision Sciences, Image Processing, Security and Computer Vision* (pp.470-479)

Authors:

 **Aditya Kumar**
Anurag College of Engineering

 **Suresh Pabboju**
Chaitanya Bharathi Institute of Technology

[Request full-text](#) [Download citation](#) [Copy link](#) [▼](#)

 To read the full-text of this research, you can request a copy directly from the authors.

[Citations \(1\)](#) [References \(16\)](#)

Abstract

Textual communication among parties where sensitive information is exchanged is prone to potential risks. Therefore, it is indispensable to have mechanism to protect such communications from malicious attacks. In the contemporary world, national cyber security has become a concern which needs to be given paramount importance. Cyber criminals have acquired wherewithal to challenge the critical digital infrastructure of a country if there is no sustainable effort to safeguard information security and forensics. For secret messaging, two important

Discover the world's research

- 20+ million members
- 135+ million public [Join for free](#)
- 700k+ research projects

Real Time Aspect based sentiment analysis on consumer reviews



Data Engineering and Communication Technology pp 801–810

Real-Time Aspect-Based Sentiment Analysis on Consumer Reviews

[Jitendra Kalyan Prathi](#) , [Pranith Kumar Raparathi](#) & [M. Venu Gopalachari](#)

Conference paper | [First Online: 09 January 2020](#)

678 Accesses | **1** Citations

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

Abstract

The rise of e-commerce websites, as new shopping channels, led to an upsurge of review sites for a wide range of services and products. This provides an opportunity to use aspect-based sentiment analysis and mine opinions expressed from text which can help consumers decide what to

Realistic Handwriting Generation Using Recurrent Neural Networks and Long Short-Term Networks

Recruit researchers Join for free Login




Home > Elementary Education > Education > Handwriting

Chapter PDF Available

Realistic Handwriting Generation Using Recurrent Neural Networks and Long Short-Term Networks

March 2020
DOI:10.1007/978-981-15-1480-7_55
In book: Proceedings of the Third International Conference on Computational Intelligence and Informatics (pp.651-661)

Authors:


-  **Suraj Bodapati**
University at Buffalo, The State University of New York
-  **Sneha Reddy**
-  **Suganya Katta**
Charanya Bharathi Institute of Technology

[Download full-text PDF](#) [Read full-text](#) [Download citation](#) [Copy link](#) [v](#)

Citations (1) References (7) Figures (0)

Abstract and Figures

Generating human like handwriting by machine from an input text given by the user may seem as an easy task but is very complex in reality. It might not be possible for every human being to write in perfect cursive handwriting because each letter in cursive gets shaped differently depending on what letters surround it, and everyone has a different style of writing. This makes it very difficult to mimic a person's cursive style handwriting with the help of a machine or even by hand for a matter of fact. This is why signing names in cursive is preferable on any legal documents. In this paper, we will try to use various deep learning methods to generate human-like handwriting. Algorithms using neural networks enable us to achieve this task, and hence, recurrent neural networks (RNN) have been utilized with the aim of generating human-like handwriting. We will discuss the generation of realistic handwriting from the IAM Handwriting Database and check the accuracy of our own implementation. This feat can be achieved by using a special kind of recurrent neural network (RNN), the Long Short-Term Memory networks (LSTM).



Model overview Heat map by stacking soft... Modified LSTM State vector Recurrent model PHS plot to feedforward...

Figures - uploaded by Suganya Katta Author content
Content may be subject to copyright.

Discover the world's research

- 20+ million members
- 155+ million publications
- 700k+ research projects

[Join for free](#)

Rough Set-Based Classification of Audio Data



[Proceedings of the Third International Conference on Computational Intelligence and Informatics](#) pp 627–637

Rough Set-Based Classification of Audio Data

T. Prathima , A. Govardhan & Y. Ramadevi

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

477 Accesses

Part of the [Advances in Intelligent Systems and Computing](#) book series (AISC, volume 1090)

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

Applications of IoT for Soil Quality. In: System Reliability, Quality Control, Safety, Maintenance and Management.


Recruit researchers Join for free Login


Chapter **PDF Available**

Applications of IoT for Soil Quality

January 2020
DOI:10.1007/978-981-13-8461-5_31
In book: ICICCT 2019 – System Reliability, Quality Control, Safety, Maintenance and Management (pp.277-286)

Authors:

 **Spandana Keyetha**
Chaitanya Bharathi Institute of Technology



 **Suresh Pabboju**
Chaitanya Bharathi Institute of Technology

[Download full-text PDF](#) [Read full-text](#) [Download citation](#) [Copy link](#)

[Citations \(6\)](#) [References \(19\)](#) [Figures \(2\)](#)

Abstract and Figures

The farming industry has become more important than ever before in the next few decades. Farmers and agricultural companies are turning to the Internet of Things (IoT) to meet demand. Since we need to continuously take measures manually it requires large amount of time. So using this Smart Agriculture we can effectively take the measurements in less amount of time. In this Smart Agriculture sensors can provide continuous measurements with respect to climate changes. Using Internet of things we can produce different ways to cultivate soil. Smart Agriculture and Smart Farming applications will help the farmer with 24/7 visibility into soil, crop health, and energy consumption level. This paper presents how to analyze soil moisture levels, soil type and soil quality according to the water and climate change. By considering all this factors, farmers can decide which type of crop is suitable for the particular soil to get profit instead of using traditional lengthy methods, and how much fertilizers have to use according to nutrients level in soil.

Soil water NodeMCU

Discover the world's research

- 20+ million members
- 135+ million public
- 700k+ research projects

[Join for free](#)

Prediction of Employee Attrition and analyzing reasons: using Multi Layer Perceptron in Spark



Recruit researchers Join for free Login


Chapter


Prediction of Employee Attrition and Analyzing Reasons: Using Multi-layer Perceptron in Spark

January 2020
DOI: [10.1007/978-981-13-8461-5_20](https://doi.org/10.1007/978-981-13-8461-5_20)
In book: ICICCT 2019 – System Reliability, Quality Control, Safety, Maintenance and Management (pp.183-192)

Authors:

 **Eliganti Ramalakshmi**  **Sindhuja Reddy Kamidi**

[Request full-text](#) [Download citation](#) [Copy link](#) 

 To read the full-text of this research, you can request a copy directly from the authors.

[References \(13\)](#)

Abstract

Employees are one of the important assets of any organization. Sudden and unplanned departures of important employees make a big loss in productivity and failure to meet deadlines of project, cost of hiring for replacement. We describe a framework of prediction model built using Multilayer Perceptron implemented in spark that

Discover the world's research

- 20+ million members
- 135+ million public

[Join for free](#)

An Optimal Heuristic for Student Failure Detection And Diagnosis In The Sathavahana Educational Community Using WEKA

[Recruit researchers](#) · [Join for free](#) · [Login](#)

Chapter

An Optimal Heuristic for Student Failure Detection and Diagnosis in the Sathavahana Educational Community Using WEKA: Proceedings of the International Conference on Communications and Cyber Physical Engineering 2018

January 2019 · [Lecture Notes in Electrical Engineering](#)

DOI: [10.1007/978-981-13-0212-1_68](#)

In book: ICCCE 2018 (pp.671-678)

Authors:



Vasanth Sena
Chaitanya Bharathi Institute of Technology



Porika Sammulal

[Request full-text](#)

[Download citation](#)

[Copy link](#)



To read the full-text of this research, you can request a copy directly from the authors.

References (8)

Abstract

The study offered in this paper aims to explore students characteristics and to determine unsuccessful student groups in respective subjects based on their earlier education and the impact of other factors in multiple dimensions. Predictive data mining techniques such as as classification analysis is applied in the analysis process. Datasets used in the investigation were collected from

Discover the world's research

- 20+ million members
- 135+ million public [Join for free](#)
- 700k+ research

e-copies of books and chapters in edited volumes/books published

Title of the paper	Web Links
A Survey on Emotion's Recognition Using Internet of Things	https://link.springer.com/chapter/10.1007/978-981-13-1580-0_31
Voiceprint-Based Biometric Template Identifications	https://www.researchgate.net/publication/339922448_Voiceprint-Based_Biometric_Template_Identifications
A Proficient and Smart Electricity Billing Management System	https://link.springer.com/chapter/10.1007/978-3-030-24322-7_20
Network Security: Perspectives and Challenges	https://www.firemon.com/network-security-threats-challenges/
Detection of Natural Features and Objects in Satellite Images by Semantic Segmentation Using Neural Networks	https://link.springer.com/chapter/10.1007/978-3-030-24178-0_8
Mobile Commerce using ECC and MQTT Protocol	
Detecting fraud in cyber banking using feature selection and genetic algorithm	http://www.jetir.org/papers/JETIRBR06025.pdf
Applications of IoT for Soil Quality. In: Gunjan	https://www.researchgate.net/publication/334093548_Applications_of_IoT_for_Soil_Quality
Use of recycled concrete aggregate in self compacting concrete: A need for sustainable development	https://www.researchgate.net/publication/330189733_Self-compacting_concrete_with_recycled_aggregates_-_A_literature_review
An Analytical Approach on Effective Selection of Sustainable Materials in Construction Industry by Environmental Management Systems (EMS) & Green Supply Chain Management	https://www.researchgate.net/publication/227786303_Environmental_Management_Systems_and_Green_Supply_Chain_Management
Behaviour of Recycled Aggregate based Steel Fiber Reinforced Self-Compacting Concrete Under Shear	https://www.researchgate.net/publication/329358565_BEHAVIOR_OF_REINFORCED_SELF-COMPACTING_CONCRETE_BEAMS_CONTAINING_STEEL_FIBERS_AND_RECYCLED_COARSE_AGGREGATES
Optimization of Processed Recycled Aggregate based Self Consolidated Concrete	
Flexural and Shear behavior of high strength pond ash concrete	https://www.researchgate.net/publication/265003392_FLEXURAL_BEHAVIOUR_OF_ACTIVATED_FLY_ASH_CONCRETE
Optimal Identification and selection of Phasor Measurement Units- A Methodology	https://ieeexplore.ieee.org/document/9067654
Analysis of partial discharge due to copper spherical particle in power transformer under different oil flow models using CFD	https://www.sciencepubco.com/index.php/ijet/article/view/14489
Optimal Combined Over current and Distance Relays Coordination using TLBO Algorithm	https://ieeexplore.ieee.org/document/8487876

Power quality enhancement using particle swarm optimization based shunt active power filter	https://www.researchgate.net/publication/228776441_Power_Quality_Enhancement_using_Shunt_Active_Power_Filter_Based_on_Particle_Swarm_Optimization
A Novel technique to observe the performance of virtual solar PV module system	https://link.springer.com/chapter/10.1007/978-981-15-2256-7_59#:~:text=A%20PV%20emulator%20can%20realize,(MPPT)%20algorithms)%20virtually.
Significance of festivals and understanding Cultural heritage	
An Experimental System Level Performance Analysis of Embedded Systems for GSM Application	https://link.springer.com/chapter/10.1007/978-3-030-24318-0_40
Comparative Analysis of Serial and Parallel Satellite Positioning Algorithms for GPS and NavIC	https://link.springer.com/chapter/10.1007/978-981-15-1420-3_47
"Design and Implementation of Bluetooth-Beacon Based Indoor Positioning System"	https://ieeexplore.ieee.org/document/9019997
"Performance analysis of QC-LDPC & Polar codes for eMBB in 5G Systems",	
"Inset fed Triple Band U- Slot Antenna for GSM900/GSM1900/WLAN Applications"	https://www.ijeat.org/wp-content/uploads/papers/v8i6S3/F12700986S319.pdf
"Estimation and Analysis of Instrumental Biases for GPS and NavIC Satellites and Receivers"	https://www.researchgate.net/publication/336153905_Estimation_and_Analysis_of_Instrumental_Biases_for_GPS_and_NavIC_Satellites_and_Receivers
"Augmentation of NavIC with GPS Over Indian Region"	https://www.warse.org/IJATCSE/static/pdf/file/ijatce31814sl2019.pdf
"Preliminary Performance Analysis of IRNSS in Sea Environment"	https://docplayer.net/amp/158758014-Preliminary-performance-analysis-of-irnss-in-sea-environment.html
"Configuring Artificial Neural Network by using Optimization Techniques to Recognize Speaker Voice"	https://www.inderscience.com/info/inarticle.php?artid=121765
"Forecasting of Ionospheric Scintillations by using Statistical Models"	
"Comparative Performance Analysis of Galileo and NavIC at a Low Latitude Station	
"IRNSS and GPS Satellite User Range Accuracy Analysis for Receiver Autonomous Integrity Monitoring "	
"Predictive Data Optimization of Doppler Collision Events for NavIC System"	https://link.springer.com/chapter/10.1007/978-981-15-3215-3_57#:~:text=An%20efficient%20algorithm%20has%20developed,median%20filter%20are%20implemented%20successfully.

“Development of Raspbian kernel Customization for Automatic Railway Level Crossing Application”	https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3508646
“Performance Analysis of Acquisition Algorithms of NavIC”	https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3508642
“Embedded Zero-Tree Wavelet Coding with Selective Decomposition Bands”	https://ieeexplore.ieee.org/document/8698062
" Deep learning-based fire fighting robot"	http://www.dynamicpublisher.org/gallery/129-ijsrr-d-1927-ebn-f.pdf
"Augmentation of NavIC-11 with BEIDOU-3 Over Indian Region"	https://www.researchgate.net/publication/336165042_Augmentation_of_NavIC_with_GPS_Over_Indian_Region
" A Scheme for Latency Analysis of Different Cryptography Methods for Security in 5G Era"	https://ieeexplore.ieee.org/document/9033754
“Low cost IoT based emission monitoring system for thermal power plant”	https://ieeexplore.ieee.org/document/8960194
"Augmentation of NavIC with BeiDou-2 Over Indian Region"	https://ieeexplore.ieee.org/document/8730865
” Design of an area efficient Braun Multiplier using high speed parallel prefix adder in cadence"	https://ieeexplore.ieee.org/document/8869307
"Augmentation of Modernized CAPS with NavIC Over Indian Region"	https://ieeexplore.ieee.org/document/8869372
"Analysis of Telugu Hand Written Characters using Transform based Techniques"	https://www.semanticscholar.org/paper/Analysis-of-Telugu-Palm-Leaf-Character-Recognition-Lakshmi-Sastry/a3122af4302b020a61880663bad02712560ebfcd
"IRNSS User Range Accuracy Evaluation for Receiver Autonomous Integrity"	https://ieeexplore.ieee.org/document/8738325
Feasibility of Soft Real-Time Operations Over WLAN Infrastructure-Independent IoT Implementation by Enhancing Edge Computing	https://link.springer.com/chapter/10.1007/978-981-15-1097-7_19
Recommended System for wellness of Autistic Children Using Data Analytics and Machine Learning	https://iopscience.iop.org/article/10.1088/1757-899X/1055/1/012101
Viability of uncomplicated IoT SaaS Development for Deployment of DIY applications over HTTP with Zero Investment	https://link.springer.com/chapter/10.1007/978-3-030-24322-7_27
A novel framework for quality of service aware vertical handover process in heterogeneous wireless networks	https://iopscience.iop.org/article/10.1088/1757-899X/981/2/022019/meta
Web of Things an intelligent approach to solve interoperability issues of Internet of Things communication protocols	https://iopscience.iop.org/article/10.1088/1757-899X/981/3/032094

Detection Of Military Targets From Satellite Images Using Deep Convolutional Neural Networks	https://ieeexplore.ieee.org/document/9250864
Poisson and Logistics Regression Analysis on Electromagnetic Field Radiation: A Case of Environmental Pollution	https://www.onlinescientificresearch.com/articles/poisson-and-logistics-regression-analysis-on-electromagnetic-field-radiation-a-case-of-environmental-pollution-in-healthcare.pdf
Emotion Analysis in Text using TF-IDF	https://ieeexplore.ieee.org/document/9377159
Diabetic Retinopathy Classification using Lightweight CNN Model	https://link.springer.com/chapter/10.1007/978-981-16-7985-8_131
“Fuel oil from plastic waste”Institute of Technology (A), Hyderabad.	https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3710529
Phytochemistry of Calotropis gigantea	https://www.flipkart.com/phytochemistry-calotropis-gigantea/p/itm085304b5e8826
<i>GIS-based Evaluation of Watershed Management in Medak District, India</i>	https://www.amazon.com/GIS-Based-Evaluation-Watershed-Management-District/dp/6200232326
Artificial Intelligence & Data Science Engineering	
Text Steganography: Design and Implementation of a Secure and Secret	https://link.springer.com/chapter/10.1007/978-3-030-24322-7_58
Real Time Aspect based sentiment analysis on consumer reviews	https://link.springer.com/chapter/10.1007/978-981-15-1097-7_67#:~:text=Aspect%2Dbased%20sentiment%20analysis%20(ABSA,build%20quality%2C%20etc.).
Realistic Handwriting Generation Using Recurrent Neural Networks and Long Short-Term Networks	https://link.springer.com/chapter/10.1007/978-981-15-1480-7_55
Rough Set-Based Classification of Audio Data	https://link.springer.com/chapter/10.1007/978-981-15-1480-7_53
Applications of IoT for Soil Quality. In: System Reliability, Quality Control, Safety, Maintenance and Management.	https://link.springer.com/chapter/10.1007/978-981-13-8461-5_31
Prediction of Employee Attrition and analyzing reasons: using Multi Layer Perceptron in Spark	https://www.springerprofessional.de/en/prediction-of-employee-attrition-and-analyzing-reasons-using-mul/16897902
An Optimal Heuristic for Student Failure Detection And Diagnosis In The Sathavahana Educational Community Using WEKA	https://www.springerprofessional.de/en/an-optimal-heuristic-for-student-failure-detection-and-diagnosis/17004076