

Name of Faculty Dr. Ravi Uyyala
 Designation Associate Professor
 Nature of Job/Appointment Regular
 Date of Joining 06-04-2022
 E-mail raviuyyala_cse@cbit.ac.in



Education Qualifications	Name of the Degree	Class
Ph. D	Doctor of Philosophy (CS) University of Hyderabad	Awarded
PG	M. TECH (CSE) NITK, Surathkal	Distinction
UG	B.E (CSE) Osmania University (OUCE), Hyderabad	First Class

Work Experience

Teaching	15 Years
Research	06 years
Industry	--
Others	--
Area of Specialization	Reversible Data Hiding, Image Processing, Machine Learning, Deep Learning and Cyber Security.
Professional Memberships	IEEE Member ACM Member
Responsibilities held at Institution Level	--
Responsibilities at Department Level	<ul style="list-style-type: none"> • Internship Evaluation Committee Member. • Class In charge. • Attendance In charge. • CEG Convener for Cyber Security. • NBA Criteria In charge (Criteria 4). • One of the AAA Committee Members (CSE). • Over all LABS Coordinator. • Auditor for CSE VIII • Overall Activity Points In charge. • NAAC Criteria In charge (Criteria 5)
MTECH Guidance	20
Courses Handled at Under Graduate / Post Graduate Level.	C and Data Structures, Data Structures and Algorithms,,Computer Organization,Operating Systems Network Programming,Design and Analysis of Algorithms Applied Algorithms,Distributed Systems,Object Oriented,Programming (OOPs) Using Python,Graph Theory,Discrete Structures Digital Image Processing (DIP),Artificial Intelligence (AI),Cyber Security (CS),HumanComputer Interaction (HCI),Advanced Algorithms(AA),Neural Networks and Deep Learning (NNDL)

Technical Skills

Concepts:Reversible Data Hiding.,Image Processing.,Vulnerability Assessment and Penetration Testing(VAPT),Multilayer-Perceptron (MLP).,SQLInjection.,Cyber Attacks.,Image Compression Techniques.,Pattern Recognition.
Languages:C, C++, Java, Coding in MATLAB, Python Programming, Basic coding in R.

Tools and Methodologies:

Draw.io,DIA Tool,Rational Rose,BurpSuite,Python IDLE,JDK,JAVA FX,MATLAB ,CLOUDSIM,ASPECTJ TEXT STUDIO,MIKTEX,AJAX ,NETBEANS,ECLIPSE WAMP SERVER,yEd GRAPH EDITOR,KERAS PYTORCH

Details of Short-Term Training Programs/Faculty Development Programs/Seminars/Workshops. Other Training (**Attended and/or Organized**).

1. Osmania University's Computer Science and Engineering department hosted Software Freedom Day in 2004 and I was a coordinator for the event.
2. Attended INFINITY 2k6 at Osmania University, Hyderabad to take part in the DEBUGGING Contest.
3. Took part in the INFINITY 2k6 QUIZ-IT Contest at Osmania University and came in third.
4. At INFINITY 2k6, held at Osmania University in Hyderabad, a brief term paper was delivered.
5. Participated in Linux GLUG Festival held at Osmania University in 2k7.
6. During 2k7 at NITK, Surathkal, I was an active volunteer with the Department of Information Technology (IT) of the Government of Karnataka's Student Internet World Program.
7. Delivered a Talk on Aspect Oriented Program to the UG Students of NITK, Surathkal in 2k9.
8. Delivered a Presentation on PRIMAL DUAL Algorithm to PG Students of NITK, Surathkal in 2k9.
9. Delivered a Talk on PERSISTENT SOFTWARE ATTRIBUTES to UG Students in 2k9 in NITK, Surathkal.
10. Participated in 6 days workshop on "NETWORK Programming and Simulators", Conducted by GNITS, Hyderabad from 5th July to 10th July, and 2 k 10.
11. Conducted a workshop on "Competitive Programming Skills" at BMCT, Indore in 2k12.
12. Conducted a workshop on "Linear Algebra" for Under Graduate Students at BMCT, Indore in 2k13.
13. Attended a workshop on MATLAB conducted by MANIT, Bhopal from 27th to Feb to 28thFeb of 2k13.
14. A poster on "Parallox" has been presented at BMCT, Indore on 27th April, 2k13.
15. Delivered a talk on "Aspect Oriented Programming Design" at BMCT, Indore on 28th, April, 2k13.
16. Conducted one day offline workshop on "Data Mining" in 2k13 at BMCT, Indore.
17. I served as the program coordinator for an FDP that was run by the Department of Computer Science and Engineering at BMCT, Indore in June, 2k13.
18. An Event Organizer for the National Level Conference was held during the 27th and 28th of 2k13 at BMCT, Indore.
19. A national Level Conference Organizer for the CSE Department held in April-2k12 at BMCT, Indore.
20. A programme coordinator for the National Level seminar on Higher Education for the 10+2 students in KHANDWA, Madhya Pradesh July, 2k13.
21. A programme Coordinator for the National Level Sports Meet for the BMCT, Students in May 2k13.
22. Participated in 10th International Conference on Information Systems and Security-ICISS held at IDRBT-2k14.
23. Participated in 5th International Conference on Fuzzy and Neural Computing held at IDRBT-2k15.
24. Participated in 18th International Conference on Distributed Computing and Networking-held at IDRBT-

- 2k17.
25. Participated in 5th International Conference on Mining Intelligence and Knowledge Exploration (MIKE-2018) held at IDRBT-2k17.
 26. Participated in 5th International Conference on Identity, Security and Behavior Analysis-(ISBA-2k19) held at IDRBT-2k19.
 27. Participated as a VOLUNTEER in several Cyber Security Drills held at IDRBT, Hyderabad during academic years 2k14-2k19.
 28. Participated in the First IAPR Summer School on "Document Analysis: Document Informatics" held at BM Birla Auditorium, Birla Institute of Scientific Research, Jaipur, Rajasthan, Jan-2k17.
 29. Participated in the short term course on "Algebra" conducted by Prof. VN Sastry, IDRBT and delivered by Prof. RK Sharma from IIT Delhi, at IDRBT during July 13-17, 2015.
 30. Presented a paper on Reversible data hiding using gradients at Amity, University, and Noida in 2k16.
 31. Presented a paper on Selective Context for Reversible data hiding at CVIP-2k17, at IIT Roorkee.
 32. Presented a paper on random distribution of reference Pixels based Prediction, at Sydney, Australia in 2k19.
 33. Presented a talk on Reversible data hiding at IDRBT in 2k19.
 34. Poster presentation has been presented on behalf of Research Exploration in 2k19 at IDRBT.
 35. One of the coordinator for conducting Cyber Attacks for various bankers at centre of Excellence in Cyber Security at IDRBT during 2k14-2k19.
 36. Conducted one day workshop on "IDEACERS", a creative ideas to present from all students using IoT technology, at ACE Engineering College, Hyderabad, Dec-2k21.
 37. Conducted one day workshop on "Competitive Programming Skills using Python" by Krishnan and, Sept-2k21, All final year students, at ACE Engineering College, Hyderabad, and Sept-2 k 21.
 38. Participated in One week online Short term programme on "Cyber Security" at CBIT-2k22.
 39. One week online programme on "Deep learning and Computational Intelligence" at IIT Indore-2k22.
 40. Won the best paper ward at CBIT on December 17th at CBIT, 2k22 on reference and non-reference pixels based prediction during research Day-2022.
 41. Conducted Expert Talk on Cryptography for Secure Storage and Communication By Dr. Rajarshi Pal from IDRBT on 14th October 2k22.
 42. Participated in Summer Tech Camp conducted by CBIT on may-2k22 for one week and delivered sessions on Python Programming.
 43. Participated in one week FDP Conducted by NITW on Cyber Security in June-2k23.
 44. Participated in one week FDP conducted by NITW on Optimization techniques in January 2k23.
 45. Participated in one week FDP conducted by BVRIT-Narsapur on Research methodology Machine Learning and data Science in July 2k23.
 46. Attended one month summer school on Deep Learning during July to August-2k23 conducted by CSI KOLKATA Chapter-2k23.
 47. Conducted National Level FDP on Cyber Security at CBIT during 25th September to 10th November, 2k23.
 48. Presented a paper on accurate gradient Based Prediction at INCET-2k23.
 49. Presented a paper on Rhombus Context Based Prediction at ICASPACE-2k23 at MGIT.
 50. Presented a paper on Selective Context Based

Prediction for Cyber Physical Systems at ICRCPM-2k23 and won the best paper ward.

51. Participated in one week online FDP on "Big data Analytics with Spark at CBIT-Jan-2k24.
52. Participated in FDP on One week online FDP on "Quality Education through OBE" at CBIT-Feb-2k24.
53. One week online FDP on "Research Advancements in Natural Language Processing", at CBIT-2024.
54. One week online FDP on "Multi-Disciplinary Research Trends in Artificial Intelligence and Data Science", at CBIT-2k24.
55. One week online FDP on "Essential Mathematics for Data Science and Machine Learning" at CBIT-2k24.
56. Conducted an expert Talk on "Financial Time Series Forecasting Volatility" By Dr. Pradeep Kumar from IIM, Shillong on 27th, January 2k24.
57. Participated in One week online FDP on Current Science and Development in Nano-Biotechnology at CBIT, during 29th Jan to Feb-2k24.
58. Participated in one week online International FDP on "Interdisciplinary Insights: data Science, Machine Learning and Cyber Security, conducted by Jain University in Feb-2k24.
59. Participated in one week online FDP on Deep Learning Solutions in healthcare Feb2k24 at CBIT.

No. of papers Published in National/International Conferences and International Journals/ Projects/Patents
National/International Conferences

- 1 **R. Uyyala** and R.Pal: "Gradient dependent reversible watermarking with low embedding impact", 3rd International Conference on Signal Processing and Integrated Networks (SPIN-2016, New Delhi), Feb-2016, pp. 184-189, 2016.
- 2 **R. Uyyala** and R.Pal, Selected Context Dependent Prediction for Reversible Watermarking with Optimal Embedding, International Conference on Computer Vision and Image Processing (CVIP-2017, IIT Roorkee), pp.35-46, 2016.
- 3 **R. Uyyala** and R.Pal, Reversible Data Hiding Based on the Random Distribution of Reference Pixels, IEEE Technical Symposium on Internet of Things (IEEE-TenSymp-2018, Sydney, Australia), pp. 225-230, 2018
- 4 **R. Uyyala** and R.Pal, , Reversible Data Hiding Using Improved Gradient Based Prediction and Adaptive Histogram Bin Shifting, 7th International Conference on Signal Processing and Integrated Networks (SPIN-2020, New Delhi), pp. 720-726, Feb-2020
- 5 A. Bhandari, S. Sharma, **R.Uyyala**, R. Pal , M. Verma, Reversible Data Hiding Using Multi-Layer Perceptron Based Pixel Prediction, 11th International Conference on Advances in Information Technology (IAIT 2020), Bangkok, Thailand), pp. 1-8, 2020.
- 6 **R. Uyyala** and R.Pal, Reversible Data Hiding with Selected Directional Context Based Prediction Using 8-Neighborhood, IEEE CONECCT 2020, Bangalore, India, pp.1-6, 2020.
- 7 **R. Uyyala**, Accurate Gradient Selective Prediction Based Histogram Bin Shifting for Reversible Data Hiding, 2023 4th International Conference for Emerging Technology (INCET) INCET-2023, Belgam, India, pp. 1-6, May-2023.
- 8 **R. Uyyala**, M. Subramanyam, Gradient Adaptive Planar Prediction for High Fidelity Images, 2023 International Conference on Wireless Communications Signal Processing and Networking (WiSPNET),pp. 1-6, June-2023.
- 9 **R. Uyyala** and J. Joshi, Gradient Directional Predictor for High Fidelity Images, International Conference on Multi-disciplinary Trends in Artificial Intelligence, pp. 135-146, May-2023.
- 10 **R. Uyyala** and S. China Ramu, Selective Weighting Histogram Shifting for Images in Cyber-Physical Systems, "International Conference on Robotics and Cyber Physical Machines", April-2023.
- 11 **R. Uyyala** and S. China Ramu, Rhombus Context Based Prediction for Reversible Data Hiding, International Conference on Advances in Signal Processing and Communication Engineering, May-2023.
- 12 V. Prasad ,**R.Uyyala**, S. Prasad, Compositional Constructs for UML State Chart Diagrams, 2nd international conference on advanced computing methodologies-2013, pp. 1-6, ICACM-2013.
- 13 **R. Uyyala**, Y Ramadevi, Raman Dugyala, A Reversible Approach for Hiding Data in Digital Media using Gray-Scale Images, 2023 2nd International Conference on Automation, Computing and Renewable Systems (ICACRS), pp. 1168-1173, Dec-2023.
- 14 **R. Uyyala** and R. Pal, Reversible Data Hiding Using Reference Pixel Based Prediction for High Fidelity Images, IDRBT Doctoral Colloquium, Dec-2020.
- 15 **R. Uyyala** and R. Pal, Reversible Data Hiding Using Reference Pixel Based Prediction, 5th IAPR, CVIP-2020, IIT Allahabad, Doctoral Colloquium -2020.
- 16 **R. Uyyala** and Sriramulu. B, Prediction Based Reversible Data Hiding for Gray-Scale Images, 7th International Conference on Image Information Processing, Dec-2023. (In Proceedings)

- 17 Harish Soni, MeenaVyas, **R. Uyyala**, Study of online tests through AJAX Tool, National Conference, Proceedings of SHODH-SAMAGAM-2012, pp.1-4,2012.
- 18 R. Jamindar, R. Jain, **R. Uyyala**, Voice recognition using Machine learning Models, 1st national Conference, SHODH-SAMAGAM-2011, pp.28-31, 2011.
- 19 An Efficient Study for Supporting Knowledge management, Priyanka, **R. Uyyala**, 1st national Conference on Challenges and Prospectives in Engineering, 2012, pp.34-37, 2012.
- 20 NirmalaSen, **R. Uyyala**, Information Visualization and Retrieval in Data mining, 1st National Conference on Challenges and Prospectives in Engineering, 2012, pp.20-23, 2012.
- 21 Neelmani, **R. Uyyala**, Visual data mining techniques and modelling in data mining, 1st national Conference on Challenges and Prospectives in Engineering, 2012, pp.44-47, 2012.
- 22 **R. Uyyala**, A New Operating System for scalable, Distributed and Parallel Computing, 2nd National Conference on Recent Trends and Innovative Practices in Engineering Management, and Pharmacy, SHODH-SAMAGAM-2013, pp.1-4, 2013.
- 23 **R. Uyyala**, S. China Ramu, and Y. Ramadevi, "Reference and Non-Reference Pixel based Prediction for Gray-Scale Images, Research Day-2022, CBIT, Hyderabad.
- 24 **R. Uyyala**, Padmavathi . V and Anila. M, "Pixel Value Ordering based Prediction for High Fidelity Images", International conference on cognitive, green and ubiquitous computing (IC-CGU-2024), March-2024. (Accepted).

National/International Journals

- 1 **R. Uyyala**, R. Pal MVNK Prasad, "Reversible data hiding using B-tree triangular decomposition based prediction", IET Image Processing, Volume 13, issue 11, 1986-1997, October 2019.
- 2 Sriramulu B, Nagarjuna Reddy S, Neeraj Kumar S, **R. Uyyala**, Sree Rama Chandra Murthy A, Anup Kumar M, The use of IoT-based wearable devices to ensure secure lightweight payments in FinTech applications, Journal of King Saud University-Computer and Information Sciences, Issue-9, Volume-11, pp.101785, 2023.
- 3 M. Faiyaz Ahmed, **R. Uyyala**, R. Mishra, "Dual Parted Pairwise PEE with Adaptable IPVO for High Fidelity Images", Mathematical Statistician and Engineering Applications, Issue-4, Volume-71, 12731-127-35, 2022.
- 4 T. Sridevi, Ramadevi. N, Y. Y. Ramadevi, Padmalatha. E, **R. Uyyala**, "An Enhanced Bio-inspired Energy-efficient Localization Routing for Mobile WSN", International Journal of Communication Systems, 2024 (Accepted).
- 5 Soni, Ali Khan, Ammal, Sangeetha, **R. Uyyala**, and Gaikwad, Federated learning Algorithm for Energy Prediction of 6G IoT Optical wireless networks, Optical and Quantum Electronics, 2024. (Accepted).
- 6 **R. Uyyala** and R. Pal, Reversible Data Hiding Using Gradients and Adaptive Histogram Bin Shifting, SN Computer Science, 2024 (Accepted with minor revision).
- 7 **R. Uyyala** and K. Mishra, Aspect Oriented Program Design in Distributed Application, International Journal of Emerging Technology and Advanced Engineering, Vol.2, Issue.3, pp. 1-13, 2012.
- 8 **R. Uyyala**, R Battini, K. Mishra, Persistent software attributes and architecture for distributed application, International Journal of Scientific & Engineering Research, vol.3, Issue.6, pp.361 - 370, 2012.
- 9 N. Nikumbhe and **R. Uyyala**, DETECTION OF SUSPICIOUS URLS IN TWITTER STREAM, International Journal of Advances in Science Engineering and Technology, vol. 2, No. 3, 2014.
- 10 V. Prasad, **R. Uyyala**, Unicast and multicast protocol for mobile adhoc networks, International Journal of Mobile and Adhoc Networks, pp. 1-10, 2k12.
- 11 **R. Uyyala** and N.Khare, An UML Based Approach for Process Modeling Using COSEML, International Journal of Advanced Research in Computer Science and Software Engineering, Vol. 2, Issue. 4, 320-325, 2k12.

Projects Under Submission

- 1 Ensuring integrity of Gray Scale Images for Satellite and Military Images using Reversible Data Hiding Techniques. (PEE Based approach).
- 2 Reversible Data Hiding for High-Fidelity Medical Images.(Multilayer Perceptron Driven Approach)
- 3 High Capacity Reversible Data Hiding for Encrypted Images using Deep learning Techniques. (Deep Learning Approaches).

Areas of Interest for Research: Reversible Data Hiding, Image Processing, Machine Learning, Deep Learning and Cyber Security