

**GITAM**  
DEEMED TO BE UNIVERSITY**VISION**

Excel in Electronics and Communication Engineering education to meet global challenges

**MISSION**

- M1: Impart technical skills and value-based education to satisfy the ever- increasing needs of the industry.
- M2: Train the students for solving engineering problems with innovative solutions.
- M3: Carry out research through continuous interaction with industry as well as premier R & D organizations.
- M4: Inculcate professional and ethical values in engineering practices.

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# RESEARCH

1. Marriwala, N. K., Panda, S., Kamalanathan, C., Sadhasivam, N., & Ramaiah, V. S. (2024). An analytical model for dynamic spectrum sensing in cognitive radio networks using blockchain management. *Engineering Proceedings*, 59(1), 163.
2. Makam, R., & George, K. Multiple models for decentralised adaptive control of discrete-time systems. *International Journal of Adaptive Control and Signal Processing*.
3. Sengottaiyan, S., Subramaniam, V., Thangavel, Y., & Sekar, K. (2023, December). Power Efficient Implementation of ECC Using LCSLA Based Dual Field Vedic Multiplier. In *Proceedings of the Bulgarian Academy of Sciences* (Vol. 76, No. 12, pp. 1868-1876).
4. Das, M., Chakraborty, T., & Kao, C. H. (2024). Sol-gel synthesized RexBi1-xO thin films for electrochemical creatinine sensing: A facile fabrication approach. *Materials Chemistry and Physics*, 315, 128889.
5. Sara, D., & Mandava, A. K. (2024). An automated detection model of threat objects for X-Ray baggage inspection based on modified encoder-decoder model. *Nondestructive Testing and Evaluation*, 1-26.
6. Ismail, K. B. M., Kumar, M. A., Mahalingam, S., Raj, B., & Kim, J. (2024). Carbon fiber-reinforced polymers for energy storage applications. *Journal of Energy Storage*, 84, 110931.
7. Mohan, S., & Panda, S. (2024). Multi-factor optimized mobile sink data collection framework for hybrid WSN-LTE assisted IoT network. *Heliyon*, 10(5).
8. Panda, S. (2024). Channel estimation for reconfigurable intelligent surface-assisted mmWave using multidimensional Runge Kutta orthogonal matching pursuit algorithm in MIMO systems. *International Journal of Communication Systems*, 37(8), e5740.
9. Kumar, A., Tasneem, F., Anand, A., Natya, S., Ganorkar, A. M., Chowdhury, R., & Chandra, M. (2024, March). Study of speech/music classification for Kannada language. In *AIP Conference Proceedings* (Vol. 2966, No. 1). AIP Publishing.
10. Padmanabhan, R., Makam, R., & George, K. (2024). Multiple estimation models for discrete-time adaptive iterative learning control. *International Journal of Systems Science*, 1-18.
11. Manoharan, A. K., Batcha, M. I. K., Mahalingam, S., Raj, B., & Kim, J. (2024). Recent Advances in Two-Dimensional Nanomaterials for Healthcare Monitoring. *ACS sensors*, 9(4), 1706-1734.
12. Anughna, N., & Ramesha, M. (2024). Multiplicative Basis Function Based Adaptive DOA Estimation in Optimal MIMO Sparse Antenna Reconfiguration Model. *IETE Journal of Research*, 1-12.

# BOOK CHAPTERS

1. Dr. Ambar Bajpai published a book chapter titled "On the Improved Storage Capacity in Power Generation Using Piezoelectric Sensors" in book *Control Applications in Modern Power Systems* which is Scopus indexed in Jan 2024. DOI : 10.1007/978-981-99-9054-2

# ARTICLE

13. Peddina, K., & Mandava, A. K. (2024). An optimized deep network-based fish tracking and classification from underwater images. *Multimedia Tools and Applications*, 1-21.

**Abstract:** Underwater imagery detection, classification and analysis is one of the essential parts of marine technology as well as fisheries management. Also, fishery science management has utilized stock assessment and statistical algorithms that are inefficient and prone to human errors. Various computer-based fish tracking algorithms are provides solution but that are not optimal solution so many drawbacks still exist. This current research article proposes a novel chimp-based Google Deep Network to detect and classify the fish from the underwater image dataset. Initially, an aquatic image database is collected through the net source and passed into the proposed system for further processing. Moreover, unwanted data is removed in the pre-processing module and filtered data is collected. After that, feature extraction phase is enabled to extract the necessary features from the filtered data. Moreover, the proposed model effectively tracks and classifies fish and types from the image database. The proposed model is validated using a sea animal image dataset, and the results are evaluated. The performance of the proposed model shows that the proposed method obtained 99.16% accuracy. Additionally, a comparative analysis is conducted to verify the effectiveness of the designed model. Hence, it proved that the presented technique gained better outcomes.

# ACTIVITIES



- On 2nd Feb 2024, the IEEE branch organized a seminar on “A vision for a world industry for differently abled using SDG & technology”. The seminar speaker is Mrs. Anandhi Giridharan, principal research Scientist at ECE, Indian Institute of Science. The speaker also emphasized the importance of appearing for the GATE exam was underscored, with a focus on test papers, question types, and the qualifying marks required. Anandhi Giridharan then guided the audience on the post-GATE journey, touching upon scholarships and motivating attendees. The seminar was very useful for the students and ignited the students to think about GATE.



- A Workshop is organized by Dr. Arun Kumar in collaboration with the IEEE branch for faculty and students on 16<sup>th</sup> Feb 2024 on CMOS DIGITAL IC DESIGN. It's a hands-on training session. Resource Person: NEHA MAHESHWARI, IIT Indore



- As part of MURTI, establishing 5G Lab in GITAM BLR, on 21<sup>st</sup> Feb 2024 Dr Ramesha M, Dr Sunita Panda, Dr Nagarjuna T, and Mrs Anughna N visited Mantiswave Networks Lab at IIIT-b. The Mantiswave Networks Lab team provided a live demonstration of 5G test bed performance, 5G market, network orchestrator, 5G private box traits, and 5G architecture. The team also briefed about the coding language, mantis 5G box weight, supporting frequency bands, distance, data rates, and adaptable beam formers for reconfigurable intelligent surfaces (RIS). The resource team also demonstrated advanced Mantis 5G core and gateways for high-frequency signals of 3.6 GHz. Mantis Lora nodes, video analyzers, and private box connections for audio and video call process flow with less latency are included in the demonstration.



- A team of 40 students & faculty members from the department of EECE on 21<sup>st</sup> Feb 2024 had industrial visit to Pavagada Solar Park. The goal of the visit is to bring awareness about the organizations generating renewable source of energy, their performance, and baseline assessment of the current practices. Faculties assisting students: Mr. Venkatesh Naik, Mr. Lokeshwarao K, Mr. Venkata Phanidhar S, Dr. Seetha Chaithanya, and Dr. A Nagaraju.



- For MURTI LAB purpose Dr. Titisha Chakraborty and Dr. Munmun Das has visited CENE-IISC on 26<sup>th</sup> Feb 2024. The purpose of the visit is for Exploring Material Science Laboratory at Centre for Nano and Soft Matter Sciences. The visit to the Material Science Laboratory at CENS Bengaluru was an illuminating experience that underscored the pivotal role of advanced instrumentation in material science research. From synthesizing novel materials to elucidating their properties, each instrument played a crucial part in advancing scientific knowledge and technological innovation.



- Project Expo for final year students during AY 2023-24- The Department Research Colloquium and Project Expo, held on April 5<sup>th</sup>, 2024, from 8:00 AM to 5:00 PM at the Department of Electrical, Electronics, and Communication Engineering, Shivaji Bhavan, GST, GITAM Deemed to be University, Bengaluru, was a resounding success. This event celebrated research excellence, fostered interdisciplinary collaborations, and showcased cutting-edge innovations in the field. Attendees had the opportunity to participate in insightful presentations and discussions







during the Research Colloquium, but the highlight was the Project Expo by final-year students.

- Dr Lignesh Durai and Dr Arvind Kumar were winners in the faculty category in the Idea Challenge, conducted at the venture development centre during Aarambh at various levels on 16<sup>th</sup> Feb 2024. Dr. Lignesh and team presented an idea titled “Wearable Nano Generator Based Pulse Monitoring System for Nadi Pariksha Medical Practice” and stood first. Whereas Dr Arvind Kumar presented on “Parent Pulse” and stood third.
- The ShoreFest 2024 was held in Vizag from 31st Jan – 05th Feb, and this year, GITAM Bengaluru Campus students have shown tremendous performance in Kabaddi, Volleyball, and Basketball games; in Athletic events have got 01 gold and 01 Silver in Men’s 100 meters and 01 Bronze in Women 100 meters events. Other games like Chess, Badminton, and Cricket reached the semi-finals.
- NSS GITAM Bengaluru comprises two units: Unit-I, which is government-sponsored, and Unit-II, which is self-funded. Unit I consists of 102 volunteers, 48 boys and 54 girls, while Unit II consists of 94 volunteers, 39 boys and 53 girls. NSS GITAM Bengaluru has 196 volunteers, with 89 boys and 105 girls across both units.
- On 16th February 2024 in Gitam University Bangalore Campus, The VDC and E-Club organized an event named “AARAMBH- 2024”, which was organized in collaboration with Gitam Quiz Club, Perspective Arts Club, IEEE and G-Studio. The event was held from 9:30 in the morning to 4:00 in the evening. In this event, we had different sub-events like Speaker Series, 1:1 Coaching, Idea Challenge, Master Class and last but not the least, Innovation Expo. The event was conducted under the supremacy and guidance of our respected Pro-Vice, Mr. K N S Acharya sir, Mr Basavaraj Sir and our beloved Deputy Director of VDC, Mr Mahesh Veerier.

## ACHIEVEMENTS

- Dr. Ambar Bajpai is Slate Nominated ExeCom member- IEEE Bangalore Section and SPSoc, Treasurer-VTSoc from Jan 2024, IEEE Certification.
- Best paper at IEEE conference for “EMD inspired SPS features for speech/music classification”.
- Dr Arvind Kumar and Dr Pankaj Kandhway successfully completed the IUCEE certification. IUCEE believes that the Centers for Teaching and Learning can be the focal point for institutional transformations in engineering education. Several IUCEE institutions already have such Centers. Some of these are well-developed, and others need to be developed further.



- Mr Sabbu Sashidhar, Ms Mallembooti Manideepa, Mr Andugulapti Sai Venkata Sesha Giri Rao and Mr Devasani Yatheendra Nath Reddy as a team participated in Empresario 2024 – Golden Business Model Competition, at IIT KARAGHPUR on 3<sup>rd</sup> Feb 2024 and were final winners of AI track.
- 16<sup>th</sup> Feb, 2024 team of students participated in Aarambh, an event conducted by VDC at Gitam Bengaluru. Four teams were final winners. The students participated in Idea Challenge and Innovation Expo.
- Murali Krishna Maganti, Ujjwal Sai and Madhumitha of Final year ECE AIML batch won 1st prize at Akaira 2024 Inter-University Fest's "SELL A PRODUCT" event hosted by M. S. Ramaiah University Of Applied Sciences



## MESSAGES



Dear Readers,

I am delighted to introduce the fourth issue of third volume of our department's newsletter, a platform that highlights the remarkable achievements and activities of the EECE community. This newsletter aims to showcase the innovative research, projects, and events shaping the future of electronics and communication engineering. As we continue to push the boundaries of technology in areas like AI, clean energy, healthcare, and more, this publication will serve as a source of inspiration and a means to keep our students, faculty, and alumni connected. We hope you enjoy this issue and look forward to your continued support and engagement.

Prithvi Sekhar Pagala, HoD, EECE



Message from a Student:

As a student in the EECE Department, I can confidently say that the facilities and teaching here are exceptional. The department has state-of-the-art labs, providing us with hands-on experience with the latest technologies in fields like embedded systems, AI, and signal processing. The faculty members are incredibly knowledgeable and approachable, encouraging us to explore innovative ideas and pursue research. Their guidance, coupled with the excellent infrastructure, has made learning informative and exciting. Thanks to the strong foundation built here, I feel well-prepared for my future endeavours.

Piyush Kumar, 4<sup>th</sup> Year, ECE

Message from the Editorial Board:

We are thrilled to present the inaugural edition of the EECE Department's newsletter. This platform celebrates our department's collective achievements, breakthroughs, and innovative spirit. This newsletter aims to inform you about the latest research, projects, and events and offer insights into the academic and extracurricular activities shaping the student experience. Our goal is to foster a stronger connection within our EECE community and beyond. We hope you find this edition engaging and look forward to your valuable feedback and contributions to future issues.