NIT DELHI
RESEARCH BULLETIN

अनुसंधान

SHOWCASING INSTITUTES'S RESEARCH ACTIVITIES

राष्ट्रीय प्रौद्योगिकी संस्थान दिल्ली

National Institute of Technology Delhi

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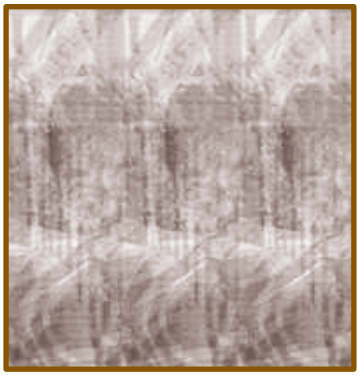

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Message from the Patron

India is now advancing on the path of "Viksit Bharat 2047" campaign that aims to make India a developed nation with economic growth, environmental sustainability, social progress and good governance. India is also aggressively pursuing the National Quantum Mission aiming to seed, nurture and scale up scientific and industrial R&D and create a vibrant & innovative ecosystem in Quantum Technology. India Semiconductor Mission and establishment of National Research Foundation are the other ambitious projects undertaken by our country. All these developments indicate towards the need for accelerating the efforts and resources in the area of research and development at NIT Delhi also.

While releasing this edition of our research bulletin '**अनुसंधान**', I am extremely proud to mention that with the tireless efforts of each and every member of NIT Delhi, our institute has secured 45th Rank in recently-released NIRF-2024. Our journey of improvement has continued when we look back at our last two rankings, i.e., NIRF-2023 (51) and NIRF-2022 (194). Apart from all other components, it is remarkably noticeable that our score in research component has significantly increased, which shows our astute commitment towards continuous improvement in our research activities in line with the national vision. NIT Delhi has already aligned its research activities in these areas in the shape of taking up new research themes, establishing new research laboratories, and signing MoUs and partnership agreements etc.

It fills me with enormous joy to share with you the next edition of '**अनुसंधान**'. I congratulate the editorial team for its tireless work behind '**अनुसंधान**'.

Prof. (Dr.) Ajay Kumar Sharma

Message from Dean (R&C)

Prof. Jyoteesh Malhotra
Dean (R&C), NIT Delhi

I am excited on the launch of the current issue of NIT Delhi's research bulletin (**अनुसंधान**), a platform dedicated to showcasing the outstanding work of our faculty, students, and collaborators. This bulletin will provide insights into cutting-edge research, highlight key achievements, and foster interdisciplinary dialogue. It is our goal to inspire innovation, collaboration, and a shared pursuit of knowledge across all fields. I encourage all researchers to contribute and engage with this platform as we continue to drive forward the boundaries of discovery. Together, we can shape a brighter future through research excellence. I heartily congratulate the whole editorial team for their tireless efforts to bring this bulletin to its shape.

Foreword from the Editors

Welcome to the latest edition of our research bulletin "**अनुसंधान**". We are thrilled to launch the 2024 issue of our Research Bulletin, showcasing ground-breaking advancements across multiple fields. This issue highlights the power of interdisciplinary research, driving solutions to global challenges. As we celebrate these achievements, we look forward to the future of research and its potential to transform our world. Our institute has been constantly keeping pace with a wide spectrum of research areas via extensive research activities undertaken by the faculty members.

The whole team of editors whole-heartedly thank the Hon'ble Director, Prof. Ajay Kumar Sharma, for giving us this opportunity to work on '**अनुसंधान**'. We are also thankful to all the faculty members for sharing the research information and data for this edition of '**अनुसंधान**'.

Faculty Editors

NIT Delhi – At a Glance

National Institute of Technology Delhi is one of the thirty NIT(s) established in the year 2010 by an act of the parliament and has been declared as an Institute of National importance. NIT Delhi is an autonomous Institute, which functions under the aegis of the Ministry of Education, Government of India. It aims to provide education and research facilities in various disciplines of Engineering, Science and Technology, Management, Social Sciences, and Humanities for advanced learning and dissemination of knowledge.

NIT Delhi started its academic session in 2010 and it was operating from its transit campus at Narela, Delhi until 2022. The institute is now fully operational at its permanent campus situated on NH-1 (GT Karnal Road), Narela sub-city, New Delhi. The institute already offers eight B. Tech. programmes run by five engineering departments (Computer Science and Engineering, Electronics and Communication Engineering, Electrical Engineering, Mechanical and Aerospace Engineering, and Civil Engineering), and M. Tech. programmes in nine disciplines run by five engineering departments and the Department of Applied Sciences. Further, Ph.D. programmes in all branches of Science and Engineering are being offered.

The institute makes all attempts to establish strong research collaborations in evolving fields of research in science and engineering. The programmes like joint thesis work, inter-institute collaborative projects, institute assistantship to PG and doctoral students, and administrative support to faculty members for taking up research and consultancy work (sponsored by external agencies). The institute also has the Institute Post-Doctoral Fellowship (IPDF) programme to further escalate the research activities and has recruited several IPDFs in recent months.

NIT Delhi takes immense pride in conveying that the guidelines of National Education Policy (NEP)-2020 have been implemented for all batches of UG and PG students. From the academic session 2024-25, the institute has started two new B. Tech. programmes in 'Aerospace Engineering' and 'VLSI Design and Technology', as well as a new M. Tech. programme in 'Civil Engineering' which have been designed in line with the NEP-2020 guidelines.

Broad Areas of Research at NIT Delhi

Department/Stream	Research Areas
Physics	Nanophotonic Sensors and Devices, Plasmonics, Fiber Optics, Optical Device Modeling, Optical imaging & instrumentation, Biomedical optics, Digital Holography, Microwave imaging and instrumentation, EM Theory in different media, Antennas and wave propagation, MHD waves & Flow
Mathematics	Convection in Fluids, Heat Transfer, Nanofluids, Ferrofluids, Micropolar Fluids, Non-Newtonian Fluids, Porous Media, Computational Applied Mathematics, Climate Modeling,
Chemistry	Design and synthesis of new porous materials with metal skeleton and their application in catalysis, chemical technology, and host-guest chemistry (molecular adsorption and molecular recognition), electrical, optical and magnetic properties.
Civil Engineering	Concrete Structures, Bridges, Earthquake Engineering, Advanced materials like Composites, FGMs, CNTs etc., Environmental Science and Engineering, Environmental Biotechnology, Waste Management, Waste to Energy Conversion
Computer Science and Engineering	Wireless Sensor Networks, Network Theory, Data Analytics, Quantum Computing in Networks, Federated Learning, Machine Learning , Motion analysis, Computer Vision, Cloud Computing, Data Security, 5G, Artificial Intelligence, Databases, Big Data Analytics, Data Science, Health Informatics, Data Mining, Data Warehousing, Databases, Big Data, Software Engineering
Electrical Engineering	Power System Restructuring/Deregulation, Electricity Market, Distributed Generation, Renewable Energy, Security Analysis, Fault Detection, Operation and Control of Power Systems, Smart Energy Network, Electric Vehicle, Power Electronics, Renewable Energy Systems, Electric Drives, Smart Grids (Micro/Nano), Modeling, Design and Digital Control of DC Conversion System, Embedded Systems, Modeling & Design of Converters, FPGA Design, Control Systems, Signal Processing, Control Systems, Biomedical Signal processing, Artificial Intelligence, Renewable Energy, Image Processing, Reliability Engineering, Conventional and Hybrid Power Systems, Power Systems Analysis, and Smart Grid Analysis, RAMS.
Electronics and Communication Engineering	MOSFET and TFET Devices, Standard cell library characterization, Computer Architecture, VLSI Design, Embedded Systems and Digital Image Processing, RF And Microwave Circuits, Networking, Wireless Communication(4G and 5G), Neural Networks, Signal and Image processing, Computer vision, Robotics, Machine Learning and Pattern Recognition, Artificial Intelligence, Optical Communication and Networks, Wireless Communication, Optoelectronics, Digital VLSI, Game theory, Peer-to-Peer Networks, Blockchain, Peer-to-Peer electricity trading, Semiconductor Devices, Nanophotonics, Speech Processing, Communication and Instrumentation, Antennas and wave propagation etc.
Mechanical Engineering	Additive manufacturing, Non-Conventional machining, Metal matrix composites, Metrology, Manufacturing Science, Advanced Machining Processes, Composite Materials

Memoranda of Understanding (MoU)

1. National Institute of Technology Delhi and Galgotias University

- NIT Delhi and Galgotias University agreed to establish a programme for academic cooperation in the areas of mutual interest, and signed an MoU. Through this MOU, both organizations affirm the value of collaboration and agree to promote the following activities:
- Cooperate in the exchange of information relating to the activities in research fields of mutual interests
- Promote appropriate joint research projects joint consultancy, with particular emphasis on national and internationally funded projects;
- Joint supervision of postgraduate and Ph.D. students;
- Sharing of infrastructure facilities (during free slots) for faculties and students of both Institutes;
- Promote expert lectures by faculty members for B. Tech/M. Tech/Ph. D students of both Institutes;
- Conduct joint conferences/short-term courses/workshops/ seminar on topics of mutual interest, as mutually agreed in writing between the parties prior to commencement of the activity;

The aim of the MOU is to enable realistic co-operations in the respective contributions and benefits of the collaboration, and there will be periodic review by both organizations.

2. MoU signed on 14.03.2024 with Ultratech Cement to promote internship and practical training, placements of B.Tech Civil students- MoU signed on 14.03.2024 with Ultratech Cement to promote internship and practical training, placements of B.Tech Civil students.

In addition to above, some more MoUs were signed in this duration. Their details are as follows:

Date of MoU	MoU signed with	Major Objectives
January 2024	Shri Mata Vaishno Devi University Jammu	Research and academics
January 2024	CSIR – Central Road Research Institute, Delhi	Research and development
February 2024	Vilnius Tech University (Lithuania)	Research and academics
March 2024	Chitkara University, Chandigarh	Research and academics
April 2024	Airport Authority of India	Civil Aviation research
June 2024	Mewar University, Chittorgarh	Research and academics

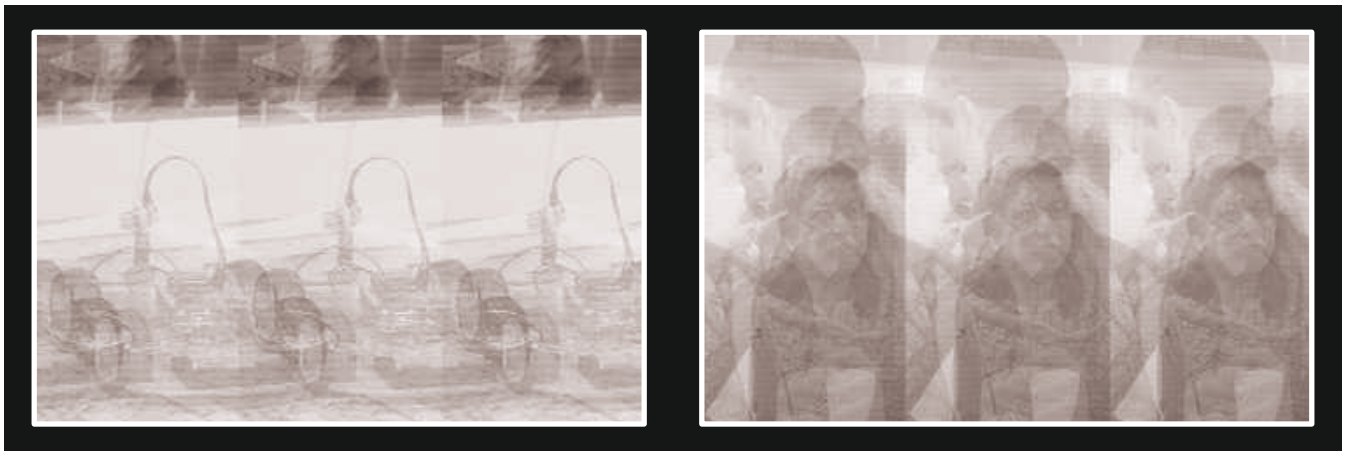
Expert Talks/Seminars/FDP/Conference/Other Events Organized

Robotics and AI: Shaping the Future of Industrial Automation

Five days' Workshop On "Robotics and AI: Shaping the Future of Industrial Automation" during April 3-6, 2024 and April 10, 2024 was organized by CSE Department under the coordinatorship of Dr. Gautam Kumar, Visual Computing & Robotics Lab. Through this workshop, students learned the basics of microprocessors, micro-controllers, robotics, sensors, and programming skills used in robotics. Students also learned how to integrate external sensors (from simple switches and buttons to light, sound, touch) and actuators (such as motors, lights, speakers, Servos, valves etc) into their designs. Topics covered in this event include:

- Expert lectures and extensive hands-on sessions cover the following topics:
- Introduction to Microprocessor
- Brief about various Sensors
- Programming of Motors

- Different types of Servos
- Arduino Programming Software
- Working on Tinkercad
- Live project on Robotics



Evolving Artificial Intelligence

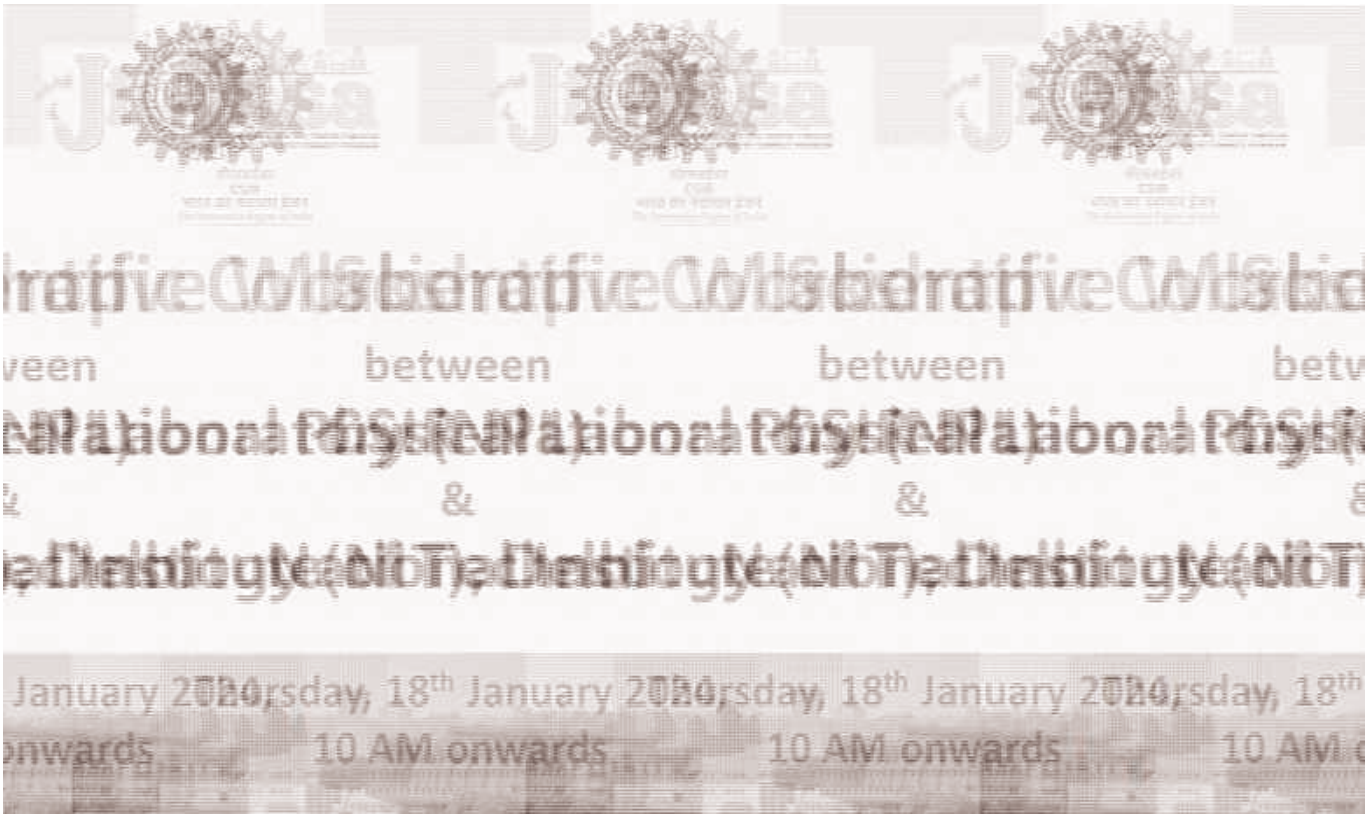
Short Term Course on "Evolving Artificial Intelligence" was organized during May 28–June 1, 2024 by CSE Department in collaboration with Department of IoT & IS, School of Computing and Intelligent Systems, Manipal University Jaipur. The faculty coordinators were Dr. Gautam Kumar and Dr. Amandeep Kaur. The objective of this Short-Term Course (STC) was to provide a comprehensive overview of the recent developments in the domain of Artificial Intelligence. Through this STC, participants got in-depth knowledge of Machine Learning and Deep Learning, Explainable AI, Generative AI, Responsible AI, Large Language Model (LLM), Federated Learning and various applications of AI including healthcare, supply chain etc. The course also briefly introduced the basics of LaTex for article writing. The technical program included the state-of-the-art seminars, discussion/presentation sessions, signifying the research challenges, insights, and practical learning through hands-on sessions on the aforementioned research areas from experts.

One Week Short-Term (STC) Course

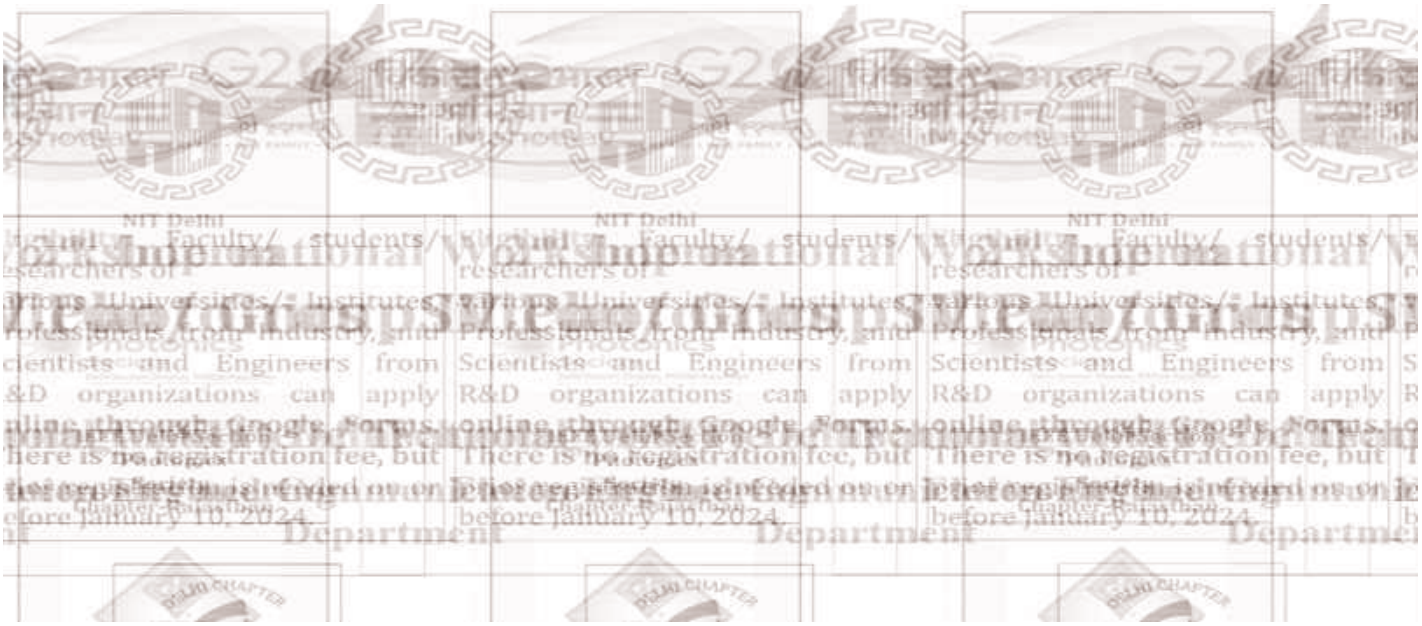
"Advances in Signal Processing, Communication and VLSI Design (ASPCV-2024)" was organized by ECE Department of NIT Delhi during April 22-27, 2024. Dr. Manisha Bharti and Dr. Sandeep Kumar coordinated this STC. The aim of the STC was to facilitate the participants about advanced technological aspects/ developments in the field of Signal Processing, Communication and VLSI and provide an insight into how to carry out research in the above areas along with disciplined focus for various real-life applications.

Talks were delivered by the experts invited from various esteemed institutions like IITs, NITs, IIITs, CFTIs. More than 80 participants from various working/ teaching/ research professions had registered in this online STC. Apart from outside participants, the department has also made an effort to involve the PG research scholars of ECE and ECE (VLSI) design, to attend various technical sessions for their enhanced technical and professional skills.

- One-day Scientific Collaborative Workshop between NIT Delhi and CSIR-National Physical Laboratory (NPL) was organized at NPL, New Delhi on January 18, 2024. Prof. Manoj Kumar chaired the event while Dr. R. Basu and Dr. Manisha Bharti were the conveners.



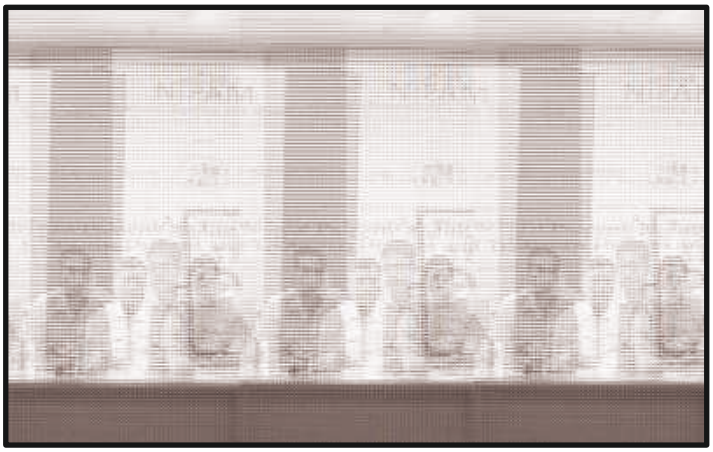
One-Week (February 5-10, 2024) 2nd IEEE International Workshop on Silicon Photonics was organized by the ECE Department with IEEE Photonics Society- Delhi Section (Rajasthan Chapter) and IEEE Circuits and Systems Society Delhi Chapter. Dr. R. Basu was the convener of the workshop.



One-day Hands-on-Training workshop on COMSOL Multiphysics was organized by ECE Department on March 20, 2024 under the convenorship of Dr. R. Basu.

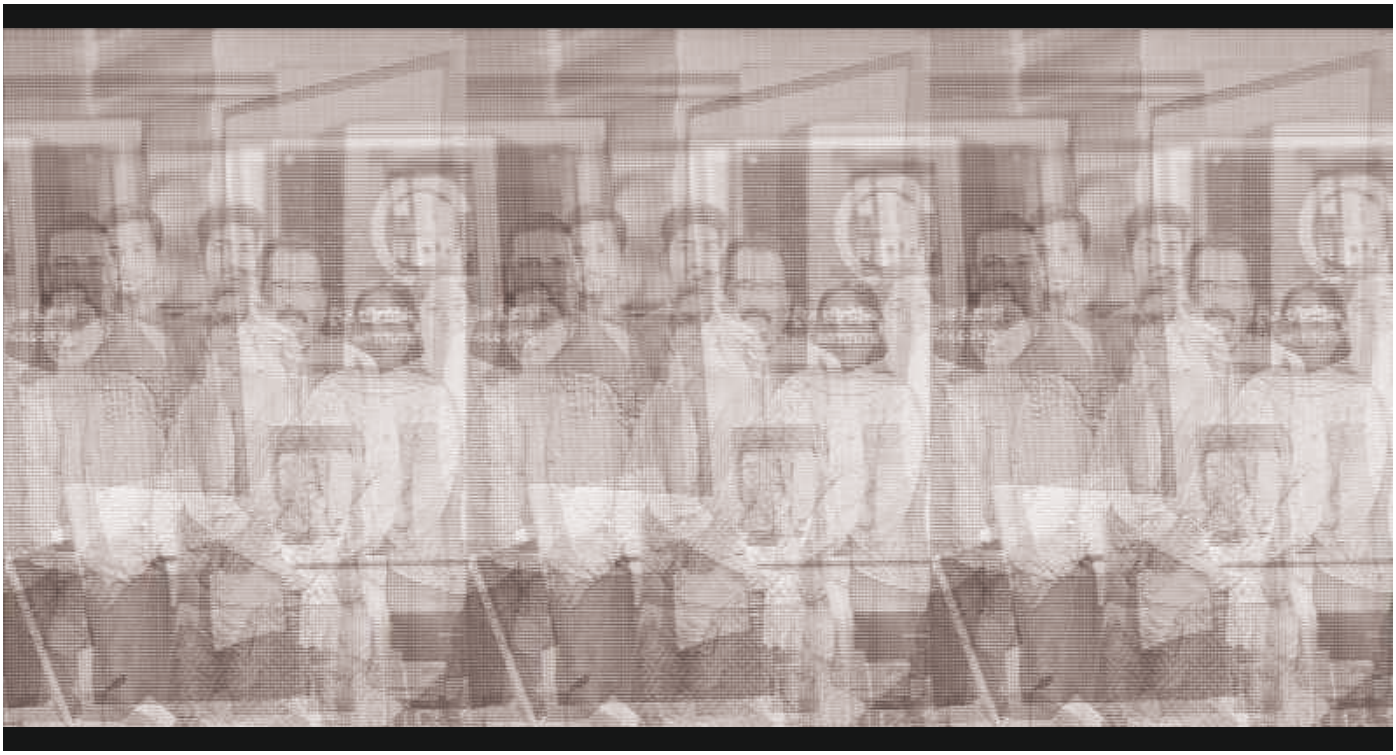
- One-day Distinguished Lecture Series (April 18, 2024) was organized by the ECE Department of NIT Delhi in collaboration with the IEEE Electron Device Society (EDS). Prof. Mridula Gupta and Prof. Sneha Kabra, University of Delhi delivered the expert lectures. Prof. Manoj Kumar chaired the event while Dr. R. Basu and Dr. Manisha Bharti were the conveners.

Expert Disquisition on Comprehensive Guide to Intellectual Property Rights, Patents, Designs and Trademarks was organized on April 19, 2024 by the ECE Department in association with the Indian Women Scientists' Association (IWSA) Delhi Branch. Dr. Debashish Banerjee, Assistant Controller of Designs and Patens, Indian Patent Office Delhi, Ministry of Commerce and Industry, Govt. of India delivered the expert lecture. Prof. Manoj Kumar chaired the event while Dr. R. Basu and Dr. Manisha Bharti were the conveners.



Five days Short-Term Course was organized by CSE Department in Hybrid mode on "Designing the Future of Networks: Conceptualizing VANET, IoT, UAN, and 5G with NETSIM" from 26th February to 1st March 2024. The coordinators were Dr. Gunjan, Dr. Divya Punia, and Dr. Jaspinder kaur. The course provided attendees with practical skills and theoretical foundations necessary to design advanced communication systems using cutting-edge technologies. With the increasing demand for professionals skilled in these areas, the short-term course offered a timely response to the growing need for expertise in next-generation networks. More than 80 participants from various institutes participated in the event.

- One Month Internship & Workshop on "Optimization Techniques in IoT enabled Wireless Sensor Networks" from 8th March to 5th April 2024, sponsored by DST-SERB-Accelerate Vigyan-Training & Skill Internship (Vrititika). The coordinator of the workshop was Dr Gunjan. The program aimed to provide the interns with training and skill development sessions on cutting edge techniques in IoT enabled Wireless Sensor Networks.

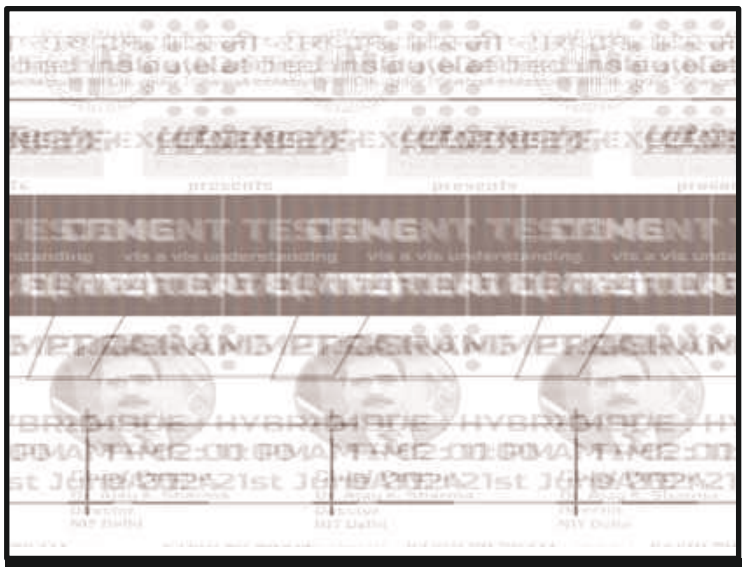


- ECE department organized one-week short term course on "Beyond 5G and IOT" during January 29-February 3, 2024 with Dr. Mahesh K. Singh and Dr. Nitin Singh Singha as coordinators.

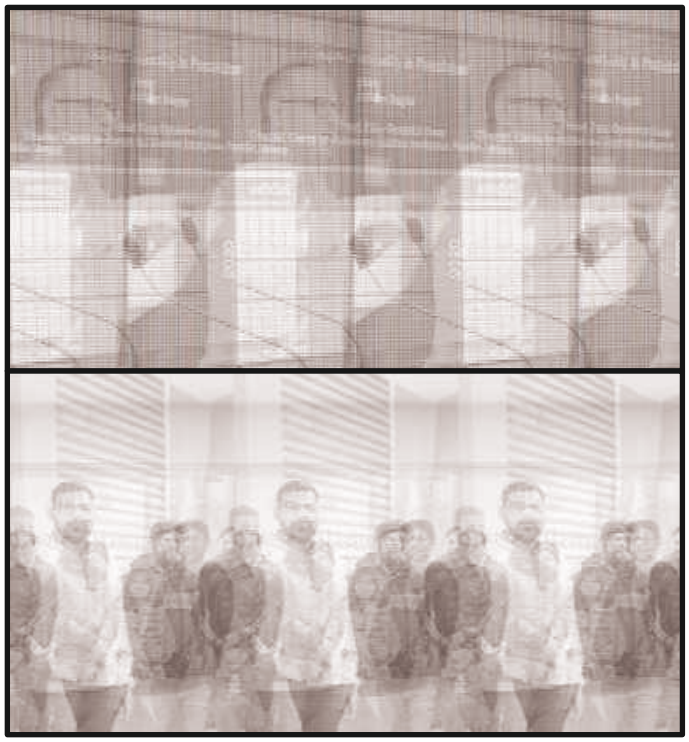
- NIT Delhi organized one-week short term course on "Internet of Things " during June 3-8, 2024 in collaboration with IIT Ropar with Dr. Anurag Singh, Dr. Pankaj Mukhija, Dr. Mahesh K. Singh and Dr. Sahil as coordinators.

Short Term Course at NIT Delhi in collaboration with NIT Jalandhar was conducted during June 22-28, 2024.

Expert talk at NIT Delhi in collaboration with Ultratech Cement was delivered by Er. Suneet Gupta on "Various Testing, both Physical and chemical on CEMENT & How to read the cement Test certificate" on 22.06.2024.



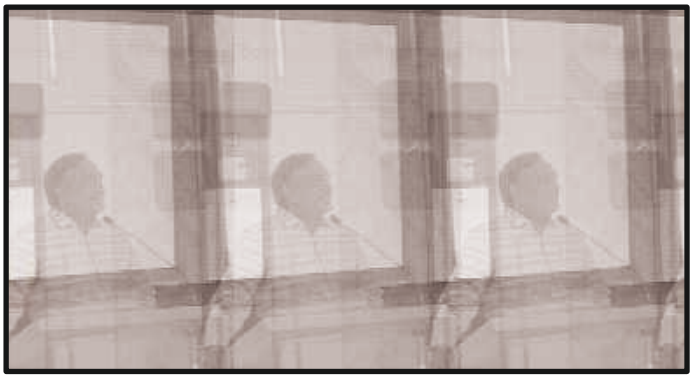
NIT Delhi organized an expert lecture by Prof. Jan Nager, Frankfurt School of Finance & Management, Professor in the Centre for Human and Machine Intelligence and Head of the Deep Dynamics Group.



Internship Program Under CPS Lab-

An internship program was organized in June 2024 in which 15 students participated from all over India. Students worked on the various problems related to the field of IoT such as agriculture and food industry. They presented their progress weekly and were able to prepare a pitch deck also for getting the fund to make and launch their products and looked for opportunity to present their pitch deck at a suitable platform. This program aimed to provide a solid understanding of IoT technologies, blending theoretical knowledge with practical, hands-on experience to the students. The objectives of this program were:

- To teach fundamental concepts and real-world applications of IoT.
- To provide practical experience with cutting-edge IoT devices and systems.
- To explore how various sensors and devices can be integrated into IoT projects.
- To equip students with the skills they need for future research and projects in IoT




Internship students Visit to IIT Delhi

A visit to the 5G lab at Bharti School, IIT Delhi was also organized for the students to give them the exposure of advanced technologies and research in the field.

Awards and Honors

Richa Jangra (PhD supervisor: Dr. Anuj K. Sharma) received the Best Oral Presentation Award during Powering Progress: The International Conference on Energy, Functional Materials and Photonics (PPICEFP-2024) organized at Madan Mohan Malviya University of Technology Gorakhpur (India) during March 1-2, 2024. The title of her paper (co-authors: Dr. Anuj K. Sharma and Dr. S. K. Mishra) was "High-responsivity ultraviolet photodetector using graphene and HfO2 layer on Si substrate".

Dr. Karan Malhotra (Medical Officer, NIT Delhi) was invited to Digestive Disease Week (DDW) 2024 held at Washington D.C., United States of America during May 18-21, 2024. This is a prestigious international conference in the field of Gastroenterology. Dr. Malhotra attended this event and represented NIT Delhi on this global stage.

News Coverage of the Institute's Research Activities

Prof. Manoj Kumar was invited as a resource person and chief guest at 6-Days AICTE-sponsored ATAL Faculty Development Programme (FDP) on Recent Trends in VLSI and Communication organized at Ganga Institute of Technology and Management, Kablana. Title of his talk was "Microelectronics and the Importance of Low Power Design".

पावर डिजाइन के बारे में जानकारी दी

झज्जर। गंगा इंस्टीट्यूट ऑफ टेक्नोलॉजी एंड मैनेजमेंट कबलाना में सात दिन के लिए फैकल्टी डेवलपमेंट प्रोग्राम का आयोजन इलेक्ट्रॉनिक्स एंड कम्युनिकेशन इंजीनियरिंग डिपार्टमेंट के लिए किया गया। यह कार्यक्रम अखिल भारतीय तकनीकी शिक्षा परिषद द्वारा प्रायोजित किया गया है। इस समारोह का शुभारंभ मुख्य अतिथि प्रोफेसर सुनील लूथरा (निदेशक, अखिल भारतीय तकनीकी शिक्षा परिषद), डॉ. मनोज कुमार (हेड ऑफ डिपार्टमेंट इलेक्ट्रॉनिक्स एंड कम्युनिकेशन इंजीनियरिंग एनआईटी दिल्ली) तथा संस्था के निदेशक प्रोफेसर (डॉ.) अमन अग्रवाल ने दीप जलाकर किया। प्रोग्राम में गंगा इंस्टिट्यूट कबलाना के प्राध्यापकों के साथ-साथ क्षेत्र के आसपास के इंजीनियरिंग इंस्टीट्यूट के इलेक्ट्रॉनिक्स एंड इंजीनियरिंग विभाग से भी प्राध्यापकों ने भी भाग लिया। संवाद

Ph.D. Degree Awarded

Sr. No.	Name	Superivisor(s) from the Institute	Thesis Title	Date of Notification
1.	Srinivas Chikkam	Dr. Sachin Singh	Fault Detection and Diagnosis of 3-Phase Induction Motor Employing Advanced Spectral Techniques and Machine Learning for Stator Current	09 January 2024
2.	Nitesh Kumar Singh	Dr. Thirupathi Raju and Dr. Anshul Agarwal	Design and Modelling of CdTe and Environmental Friendly Perovskite Solar Cell for Photovoltaic Applications	10 January 2024
3.	Meena Pant	Dr. Harish Kumar, Dr. Leeladhar Nagdeve	A comprehensive investigation of Mechanical Properties and Dimensional Analysis of 316L Stainless Steel Additive Manufactured Parts	02 February 2024

4.	Deepak Kumar	Dr. Anmol Ratna Saxena	Analysis, Design and Control of Three-Port Battery Integrated DC-DC Converters for LVDC Systems	14 February 2024
5.	Neha Bansal	Dr. Shelly Sachdeva	Data Modelling and Database Migration for NoSQL Data Base	22 March 2024
6.	Shailza Kanwar	Dr. Vivek Shrivastava	Design and Development of Cross-Project Defect Prediction Model for Software Testing using Machine Learning	18 April 2024
7.	Sanjeev Kumar Sharma	Dr. Rikmantra Basu	Developing Strategic Financing Options for National Institutes of Technology	16 April 2024
8.	Surbhi Aggarwal	Dr. Amit Kumar Singh	Impact Analysis of Electric Vehicle Charging Station on Electrical Power Systems	08 May 2024
9.	Shubham Kumar Singh	Dr. Thirupathi Raju and Dr. Anshul Agarwal	Intelligent Control of Hybrid Energy System for Sustainability and Enhanced Power Quality	08 May 2024

Recently Awarded Externally Funded Research Projects

1. **Research Project Title:** Extended Forecast of Wind-Wave Parameters along the Indian Coastline using Multi-tasking Machine-Learning Techniques
   Funding agency: INCOIS Hyderabad
   Name of faculty member(s): Dr. Prashant Kumar (PI), Dr. Anurag Singh (Co-PI)
   Name of the department(s): Applied Sciences and CSE
   Brief summary of the research work:

The project aims to provide extended forecasts for wind-wave parameters such as coastal flooding and storm surges along the Indian coastline for periods ranging from one month to 12 months. This involves developing an efficient multi-tasking Machine Learning model to predict significant wave height, wave period, wave direction, wind speed, and swells using datasets from reanalysis, satellites, and buoys.

Additionally, the project seeks to estimate the Expected Annual Affected Persons (EAAP) and Expected Annual Financial Loss (EAFL) due to extreme coastal events, using the forecasted results. Lastly, the project aims to identify significant regions along the Indian coastline that exhibit statistical significance at the 1% and 5% levels to enhance the safety and preparedness of coastal communities.

2. **Research Project Title:** An efficient sustainable concrete construction with GGBS based GRAC with inclusion of waste products (Accepted)
   Funding agency: NBCC
   Name of faculty member(s): Dr Ajay Kumar
   Name of the department(s): Civil Engineering
   Brief summary of the research work: It will a approach to develop sustainable concrete construction with GGBS based GRAC with inclusion of waste products.
   Expected outcome of the project: This will be suitable for green buildings development in future.

Consultancy Works

Dr. Ajay Kumar (Civil Engg.) has completed consultancy works of different organizations like Central Public Works Department (CPWD), Delhi Development Authority (DDA) etc. of Rs. 20 Lakhs. Also, he has ongoing Consultancy works of different organizations (Rs. 30 Lakhs).

Book Chapters Published

1. Manisha Bharti, Sandeep Kumar, Akash Rawat, "Design of Low Phase Noise PLL with Improved Locking Time", In: Gabbouj, M., Pandey, S.S., Garg, H.K., Hazra, R. (eds) Emerging Electronics and Automation. E2A 2022. Lecture Notes in Electrical Engineering, vol 1088. Springer, Singapore, Feb 2024, DOI: https://doi.org/10.1007/978-981-99-6855-8_36
2. Manisha Bharti, Sandeep Kumar, Akash Rawat, "Design of Low Phase Noise PLL with Improved Locking Time", In: Gabbouj, M., Pandey, S.S., Garg, H.K., Hazra, R. (eds) Emerging Electronics and Automation. E2A 2022. Lecture Notes in Electrical Engineering, vol 1088. Springer, Singapore, Feb 2024, DOI: https://doi.org/10.1007/978-981-99-6855-8_36.
3. Preeti Verma, Ajay K Sharma, Swatantrata Shukla, Alok Kumar Mishra, D. Vaithiyanathan, Baljit Kaur, "Study and Analysis of Low Power Dynamic Sequential Circuits", Nanoscale Semiconductor Devices Fundamentals and Applications, Central West Publishing, Australia, pp. 105 – 142, 31 May 2024 (Scopus Index, ISBN (print): 978-1-922617-58-3, DOI:https://books.google.co.in/books?id=Sou30AEACAAJ)
4. K. K. Senthilkumar, E. Avantika, B.Gayathri, VaithiyanathanDhandapani,"VLSI Implementation of Reconfigurable Canny Edge Detection Algorithm", In: Sachdeva, S., Watanobe, Y. (eds) Big Data Analytics in Astronomy, Science, and Engineering, BDA 2023. Lecture Notes in Computer Science, Vol. 14516, pp. 110 – 119, 27 April 2024, Springer, Cham. (Scopus Index, ISBN (print):978-3-031-58501-2, DOI:https://doi.org/10.1007/978-3-031-58502-9_7)

5. Verma, M., Sahoo, G.S., Mishra, G.P. " Passivation in the c-Si Solar Cell to Enhance the Efficiency with Low Surface Recombination Velocity" Handbook of Emerging Materials for Semiconductor Industry. Springer, Singapore, February 2024, ISBN: 978-981-99-6648-6. DOI: https://doi.org/10.1007/978-981-99-6649-3_29
6. Sahoo, G.S., Verma, M., Mishra, G.P. "A Comparative Study on AlGaAs and GaAs Tunnel Diodes for Dual Junction Solar Cells" Handbook of Emerging Materials for Semiconductor Industry. Springer, Singapore. February 2024. ISBN: 978-981-99-6648-6 DOI: https://doi.org/10.1007/978-981-99-6649-3_27
7. Single Inverter Switched SVPWM Scheme for Four-Level Open-End Winding Induction Motor Drive List of authors : Suresh Lakhimsetty,Hareesh Myneni and Obbu Chandra Sekhar, Publisher details: Wiley First published:1 July 2024,Print ISBN:9781394166329 |Online ISBN:9781394167371 |DOI:10.1002/9781394167371
8. PLL Based Photovoltaic System of LCL Three-Phase Grid Connected Inverter with and Without SVPWM Technique, List of authors : Naga Surya Kiran Rayavarapu & Chandra Sekhar Obbu, Publisher details: Springer, First published: 28 November 2023, Print ISBN: 978-981- 99-6774-2.
9. R Yadav, S Sood, VS Pandey"High-Performance Dual Band Graphene Slotted Antenna for Terahertz Applications" Taylor and Francis Group, 2024.ISBN:- 9781032644752.
10. Muralimohan Cheepu, Syed Quadir Moinuddin, Ashok Kumar Dewangan, 2024, "Introduction to Industry 5.0" Automation in Welding Industry: Incorporating Artificial Intelligence, Machine Learning and Other Technologies, Wiley, ISBN: 9781394172412.
11. Venkata Charan Kantumchu, Syed Quadir Moinuddin, Ashok Kumar Dewangan, Muralimohan Cheepu, 2024 "Quality Assurance and Control in Welding and Additive Manufacturing" Automation in Welding Industry: Incorporating Artificial Intelligence, Machine Learning and Other Technologies, Wiley, ISBN: 9781394172412.
12. Suresh Goka, Syed Quadir Moinuddin, Muralimohan Cheepu, Ashok Kumar Dewangan, 2024, "Welding Practices in Industry 5.0: Opportunities, Challenges, and Applications" Automation in the Welding Industry: Incorporating Artificial Intelligence, Machine Learning and Other Technologies, Wiley, ISBN:9781394172412.

Books Published

1. S Balamurugan, Murali Mohan Cheepu, Syed Quadir Moinuddin, Ashok K Dewangan, Shaik Himam Sahab, 2024 "Automation in Welding Industry: Incorporating Artificial Intelligence, Machine Learning and Other Technologies" Wiley, ISBN: 978-139-4172924-4.
2. Shelly Sachdeva, Yutaka Watanobe," Big Data Analytics in Astronomy, Science, and Engineering" Springer, May, 2024, 978-3-031-28349-9.

Expert Talks Delivered and Conference Papers Presented

Faculty Member(s)	Details of Event and Topic of talk
Dr. Gautam Kumar	FDP at Amity University, Noida on "Biometric and Machine Learning"
	5 Days Workshop at MANIT Bhopal on "Machine Learning"
Dr. Sandeep Kumar	InCITe 2024_4th International Conference on Information Technology, Amity University, U.P., India during 6-7 March 2024 on "Improved Object Detection with YOLOv3 using Blur Images"
	2nd International Conference on "Device Intelligence, Computing and Communication Technologies" (DICCT-2024), Dehradun, India during 15-16 March 2024 on "A Hybrid Data Security Technique using Chaos Encryption, RC4 encryption, Huffman Data Compression and LSB Steganography"
	International Conference on IoT based Recent Trends in Engineering and its Applications (IBRTEA-2024), organized by Khalsa College of Engineering and Technology, Amritsar, India during 4-5 April, 2024 on "Simulative analysis of MIMO-VLC using FSO Channels"
	International Conference on IoT based Recent Trends in Engineering and its Applications (IBRTEA-2024), organized by Khalsa College of Engineering and Technology, Amritsar, India during 4-5 April, 2024 on "Study and Analysis of Pulse Width Modulation (PWM) Signal with User-Defined Signal Parameters using MATLAB"
	International Conference on IoT based Recent Trends in Engineering and its Applications (IBRTEA-2024), organized by Khalsa College of Engineering and Technology, Amritsar, India during 4-5 April, 2024 on "Advanced Crack Segmentation using Mobile Net CNN"
	International Conference on IoT based Recent Trends in Engineering and its Applications (IBRTEA-2024), organized by Khalsa College of Engineering and Technology, Amritsar, India during 4-5 April, 2024 on "Enhancing Hiring Decisions Through Machine Learning: Textual Analysis in Resume Evaluation"
Dr. Sandeep Kumar	IEEE International Conference on Computing, Communication, and Intelligent Systems (ICCCIS), Greater Noida, India, during 03-04 Nov, 2023 (Published on 15 February 2024) on "Performance Analysis of Adaptive Histogram Equalization-Based Image Enhancement Schemes" (Not included in previous issues of NITD research bulletin)
	2nd International Conference on VLSI and Microwave and Wireless Technologies (ICVMWT 2024), Organized by Department of ECE, MMMUT, Gorakhpur, India during 17-18 May ,2024 on "Design of Full Adder with High Speed, Low Power Small Area Using CMOS Memristor Hybrid Circuits"
	InCITe 2024_4th International Conference on Information Technology, Amity University, U.P., India during 6-7 March 2024 on "Improved Object Detection with YOLOv3 using Blur Images"

Dr. Manisha Bharti	2nd International Conference on "Device Intelligence, Computing and Communication Technologies" (DICCT-2024), Dehradun, India during 15-16 March 2024 on "A Hybrid Data Security Technique using Chaos Encryption, RC4 encryption, Huffman Data Compression and LSB Steganography"
	Expert Talk Delivered in Faculty Development Program on Research Methodology-Strengthening Research Skills at Meerut Institute of Engineering & Technology during 26 March, 2024 on "Research Process, Types of Research, Data & Variables"
	International Conference on IoT based Recent Trends in Engineering and its Applications (IBRTEA-2024), organized by Khalsa College of Engineering and Technology, Amritsar, India during 4-5 April, 2024 on "Simulative analysis of MIMO-VLC using FSO Channels"
	International Conference on IoT based Recent Trends in Engineering and its Applications (IBRTEA-2024), organized by Khalsa College of Engineering and Technology, Amritsar, India during 4-5 April, 2024 on "Study and Analysis of Pulse Width Modulation (PWM) Signal with User-Defined Signal Parameters using MATLAB"
	International Conference on IoT based Recent Trends in Engineering and its Applications (IBRTEA-2024), organized by Khalsa College of Engineering and Technology, Amritsar, India during 4-5 April, 2024 on "Advanced Crack Segmentation using Mobile Net CNN"
	International Conference on IoT based Recent Trends in Engineering and its Applications (IBRTEA-2024), organized by Khalsa College of Engineering and Technology, Amritsar, India during 4-5 April, 2024 on "Enhancing Hiring Decisions Through Machine Learning: Textual Analysis in Resume Evaluation"
	IEEE International Conference on Computing, Communication, and Intelligent Systems (ICCCIS), Greater Noida, India, during 03-04 Nov, 2023 "Performance Analysis of Adaptive Histogram Equalization-Based Image Enhancement Schemes" (Published on 15 February 2024)
	International Conference on IoT based Recent Trends in Engineering and its Applications (IBRTEA-2024), organized by Khalsa College of Engineering and Technology, Amritsar, India during 4-5 April, 2024 on "Performance Evaluation of Visible Light Communication in Healthcare System"
	International Conference on IoT based Recent Trends in Engineering and its Applications (IBRTEA-2024), organized by Khalsa College of Engineering and Technology, Amritsar, India during 4-5 April, 2024 on "FPGA-Based Implementation of Low Latency SRAM based TCAM"
	Invited Talk Delivered at SRM University during 9 April, 2024 on "TeraHertz Communications- An Overview"
	Expert for SERB- High-End Workshop (Karyashala), IIIT Una during 18 March 2024 on "Importance of Low-Power VLSI and Design Techniques"

Dr. Manisha Bharti	One-week Faculty Development Program on "Advanced VLSI Design Technologies and Its Applications, DTU Delhi during 28 May, 2024 on "Low Power CMOS VLSI and Design Techniques"
	2024 Sixth IEEE Sponsored International Conference on Electrical, Computer and Communication Technologies (IEEE ICECCT 2024) held at Chhattisgarh SwamiVivekanand Technical University (CSVTU), Bhilai, Chhattisgarh, India during 26 to 28, June 2024 on "Session Chaired in a Technical Session"
	2024 Sixth IEEE Sponsored International Conference on Electrical, Computer and Communication Technologies (IEEE ICECCT 2024) held at Chhattisgarh SwamiVivekanand Technical University (CSVTU), Bhilai, Chhattisgarh, India during 26 to 28, June 2024 on "Session Chaired in a Technical Session"
	S R University, Warangal, Telangana, India during 6 May, 2024 on "Smart Applications using Microcontrollers"
	SERB sponsored five days seminar on "AI in Precision Agriculture: Transforming Farming for a Sustainable Future",organized by Sri Krishna College of Technology, Coimbatore, Tamil Nadu, India, during 04-08 March, 2024 on "Embedded Architecture for Improving Agricultural Productivity Using Soft Computing Techniques"
	Mohamed Sathak Engineering College, Ramanathapuram, Tamil Nadu, India during 23 Feb,2024 on "Into the Jungle-Walkthrough on Recent Trends in VLSI"
	Six Days Faculty Development Training Programme on, "CS3491-Artificial Intelligence and Machine Learning" organized by Madras Institute of Technology Campus, Anna University, Chennai, India from 05 to 10 February 2024 on "AI for Embedded Systems"
	SRM University Delhi-NCR, Sonipat, Haryana Schedule on 3rd May, 2024 on "Hybrid Electric Vehicle—Progress in the Era of 21st Century"
	Ajay Kumar Garg Engineering College, Ghaziabad and FDP on "E-Mobility and Associated Power Electronics" during 21st August - 25th August 2023 on "Types of motor for EV technology, torque requirement of vehicles, Supply requirement of motors for satisfactory vehicle operation, present state of the art"
Dr. Amit Kumar Singh	V. Raju, A. Kumar, R. K. Chaudhary and Amit Kumar Singh,Proc. of 5th Electric Power and Renewable Energy Conference (EPREC 2024), NIT Jamshedpur, India during 24-26 May 2024 on "Wireless Charging System for Electric Vehicles"
	Shivam Gupta, Shivin Mehta, Vivek Shrivastava and Amit Kumar Singh, 3rd IEEE International Conference on Artificial Intelligence for Internet of Things AIIoT 2024, Vellore Institute of Technology, Tamil Nadu, India, during 03 - 04, May 2024 on "Illuminating Urban Landscapes using IoT Based Approach for Smart Street Lighting"
	Vikrant Kumar, Prakhar Seth and Amit Kumar Singh, 5th Electric Power and Renewable Energy Conference (EPREC-2024), NIT Jamshedpur, India during 24-26 May 2024 on "Loss Minimization Using Distributed Generation System in Electrical Power Systems"

	Juhi Kumari, Amit Kumar Singh,IEEE International Students' Conference onElectrical, Electronics and Computer Science(SCEECS), Maulana Azad National Institute ofTechnology, Bhopal, India during 24 - 25February, 2024 on "Optimizing Solar Power Generation with Bidirectional Converter and Fuzzy Logic for Battery Management in Evs"
Dr. Amit Mahajan	Central University of Himachal Pradesh during 3-4 June 2024 on "Fluid Dynamics and Rayleigh Benard Convection"
	Central University of Himachal Pradesh during 3-4 June 2024 on "Stability and Convection in Porous Media"
	Central University of Himachal Pradesh during 3-4 June 2024 on "Energy Methods for Analyzing Hydrodynamic Stability"
	Central University of Himachal Pradesh during 3-4 June 2024 on "Convection and Heat Transfer in Ferrofuids"
Dr. Gyanendra Sheoran	SPIE Defense + Commercial Sensing, 2024, National Harbor, Maryland, United States during 21-25 April 2024 on "Enhanced wide-field off-axis holography based on intensity correlation
Dr. Vinay Shankar Pandey	Advance and Emerging materials for Technological Applications (AEMTA-2024) at Sant Longowal Institute of Engineering and Technology, Punjab on "High-frequency MHD Waves & Its Role in Heating the Solar Coronal Plasma"
Dr. Prashant Kumar	Power Electronics, Intelligent Control, and Energy Systems (IEEE-ICPEICES-2024), Delhi Technological University, Delhi, India during 26th - 28th April, 2024 on "Projected changes in extreme Wave power generated through swell waves"
	World Ocean Science Congress (WOSC), IIT Madras, Chennai, India during 27th - 29th February, 2024 on "Evaluation of Wave Energyusing COWCLIP2.0 over the Indian Ocean"
	National Conference on Geo-Sciences for Sustainable World (GSW), Banaras Hindu University, Varanasi, India during 6-7 March, 2024 on "Assessment of Particulate matter pollution and the role of Meteorology in Delhi, India".
Dr. Ashok Kumar Dewangan	Expert talk at RD Engineering College Ghaziabad, India during 24 February 2023 on "Battery Thermal Management System for Electric Vehicle"
Dr. Anmol Ratna Saxena	An International Conference on Future Power Network and Smart Energy Systems: Issues and Challenges (FPNSES-23) NIT Kurukshetra during 8-10 March 2024 on"Design and Simulation of Vintage-Styled ElectricVehicles: Capturing the Essence of Classic Cars with Electric Drive Systems"
	An International Conference on Future Power Network and Smart Energy Systems: Issues and Challenges (FPNSES-23) NIT Kurukshetra during 8-10 March 2024 on "Integrated Design and Validation of High-PerformanceElectric Vehicle Powertrains: A MATLAB/SimulinkApproach"

Dr. Mahesh Kumar Singh	2024 IEEE International Students' Conference on Electrical, Electronics and Computer Science held at NIT Bhopal, date: 24th – 25th February 2024, Bhopal, India during 24th – 25th February 2024 on "Innovative Approach to Design High Speed and Power Effective Content Addressable Memory"
	IEEE parul university International conference on Engineering and Technology (PICET-2024) during 03-04 May, 2024 on "Performance Comparison of Conventional Pulse Triggered Flip Flops and a Pulse Flip Flop with Signal Feed Through Technique"
	First International Conference on Electronics, Communication and Signal Processing (ICECSP 2024) held at NIT Delhi during 8-10 August 2024 on "Novel Signal-Feedthrough Flip-Flop Operation with Low Power Consumption and High Speed"
Dr. Mahesh Kumar Singh	15th INTERNATIONAL IEEE CONFERENCE ON COMPUTING, COMMUNICATION AND NETWORKING TECHNOLOGIES (ICCCNT)-June 24 - 28, 2024, IIT - Mandi, Himachal Pradesh, India during "Cryptographic sub-block RO-PUF integrating embedding in modular PUF architecture"
	First International Conference on Electronics, Communication and Signal Processing (ICECSP 2024) held at NIT Delhi during 08-10 Aug 2024 "Comparative Analysis of machine learning algorithms for LOS/NLOS identification"
	First International Conference on Electronics, Communication and Signal Processing (ICECSP 2024) held at NIT Delhi during 08-10 Aug 2024 on "A Comparative Analysis for EEG-Based Motor Imagery Classification Across Diverse Datasets"
Dr. Sachin Singh	Kuala Lumpur, Malaysia during 22-24 March, 2024 on "A Hybrid Feature Selection Based Machine Learning Model for Detection of Motor Faults"
Dr. Shelly Sachdeva	Scientific Collaborative Workshop between CSIR-National Physical Laboratory (NPL), New Delhi and National Institute of Technology (NIT) Delhi, at NPL, New Delhi during 18 Jan, 2024.
	AICTE – Sponsored STTP on "Next Generation AI – Research Perspectives, "NIT Nagaland during 18-24 March 2024 on "Data Science and Healthcare"
	IEEE Sixth International Conference on Electrical, Computer, and Communication Technologies (ICECCT 2024) during 26-28 June 2024 "HR Pulse Analyzer: Using Insights to Power Decision-making"
	IEEE Sixth International Conference on Electrical, Computer, and Communication Technologies (ICECCT 2024) during 26-28 June 2024 on "Cost Model for Schema Choices: Performance and Trade Analysis"
Dr. Pankaj Mukhija	Eighth IFAC International Conference on Advances in Control and Optimization of Dynamical Systems (ACODS 2024) during 12-15 March 2024 on "Adaptive Backstepping Control of Solar-Wind Hybrid Energy Conversion System under Disturbances"

Dr. Amandeep Kaur	Faculty Development Programme on "Artificial Intelligence –driven Data Analytics for Business Research and Teaching" Organized by Department of Management Studies, ABV-IIITM Gwaliar during 24 - 30 May 2024 on "Visual Exploration of Literature using VOS Viewer".
Dr. Preeti Verma	SLIET Longowal during 16 March 2024 on "Digital VLSI Design_ Challenges & Recent Trends".
	SRM University Sonipat during 7 May 2024 on "Digital VLSI Design"
Dr. A. P. Singh	Symposium on Nanomaterials and Applications (NMA-2024) during 28th February 2024 on "MCM-41Functionalised orders mesoporous materials: Application in catalysis and sensing".
Dr. Gunjan	Speaker: Faculty Development Program (FDP) in NSUT during 15-19 July, 2024 on "Multi-objective optimization algorithms and its applications in IoT enabled Wireless Sensor Networks".
	Invited Speaker, Five Days Amity Faculty Development Program on Advances of Computing Technology (A-FACT), Department of Computer Science and Engineering, Amity School of Engineering and Technology, Amity University Uttar Pradesh, Noida during 13 to 17 May, 2024 on "Optimization techniques in IoT enabled WSNs".
Dr. Ajay Kumar	Expert talk for One Day Seminar on "Computational Methods in Civil Engineering" organized by the Civil Engineering Department at SRM University, Sonepat during 04 April 2024 on "Computational Methods in Civil Engineering".
	Expert in Board of Studies (BoS) Meeting of CE Department organized by the Civil Engineering Department at SRM University, Sonepat during 12 June 2024 on "Review of curriculum of the Civil Engineering Department".
Dr. Anurag Singh	SERB High-End Workshop (KARYASHALA) on A Practical Approach to Machine Learning and Deep Learning for Computer Vision Applications using High End Computing Resources from at MLNIT Allahabad during 15 -22 March 2024 on "Federated Learning in Computer Vision"
	Short Term course on IoT with AWaDH IIT Ropar at NIT Delhi, NIT Delhi during 03-08 June 2024 on "IOT Security"
	Three-week International Training Programme (ITP) on 'Financial Inclusion and Digital Transformation' NILERD, Delhi during 27th March to 16th April 2024 on "AI and Digital Transformation"
	2nd International Conference on Disruptive Technologies (ICDT-2024)" during 11-12 March 2024 on "Disruptive Technologies"
	Three weeks International Training Programme (ITP) on 'Digitalization and Human Resource Management', NILERD, Delhi during 17 January to 6th February, 2024 on "Information Security, Machine learning, Cloud Architecture design"

Patent applications filed

S.N.	Title	Name of Faculty member(s)	Application no.	Date of filing
1	A Flux Reversal Machine and Method for reducing Cogging Torque	Dr Obbu Chandra Sekhar Prof Ajay Kumar Sharma Tirupathiraju Kanumuri	202411010631	15-02-2024
2	Design and Development of a Hybrid Integrated Real-Time Sign Language Recognition system	Dr. Mahesh K. Singh	- - -	- - -
3	Design and Development of slipping possibility warning indicator in two wheeler vehicles.	Ankur Mittal & Dr. Mahesh K. Singh	- - -	- - -

Patents Granted

S.N.	Title	Name of Faculty member(s)	Patent no.:	Certificate issue date:
1	System and Method to Improve the Performance of a Multipoint Clamped Inverter Fed Induction Motor Drive	Dr Obbu Chandra Sekhar Prof A H Bhat	202111060761	17-05-2024
2	A system and method for regulating inverter fed induction motor drive using FOPI controller with DTC strategy.	Dr Obbu Chandra Sekhar Prof A H Bhat Prof Rakesh Seghal	202141017219	03-02-2024
3	Coil Based Solar Cooking Heater	S. Swain, S. S. Sahoo, M. K. Nayak, V. S. Pandey, et al.	538847	21-05-2024
4	Metal 3-D Printed Electrode for Multi-axial Near-dry Electric Discharge Machining to erode Material from a Workpiece	Ankush Katheria, Dr. Leeladhar Nagdeve, Dr. Harish Kumar, Dr. Krishnakant Dhakar	Design No. 405589-001	- - -

Laboratory News

1. Advanced concrete Laboratory developed in Civil Engineering Department (Dr. Ajay Kumar)
2. CPS Lab developed in collaboration with AWaDH IIT Ropar. (Dr. Anurag Singh)

More papers presented/published in conferences

- Hemasri Cheekati, Preeti Verma, Dhandapani Vaithiyanathan,"Guava (Psidium Guajava) Disease Detection Using CNN", 2024 Sixth International Conference on Electrical, Computer and Communication Technologies (ICECCT 2024), Chhattisgarh Swami Vivekananda Technical University, Bhilai, Chhattisgarh, India, 26th – 28th, June 2024.
- Lingampalli Venkat Laxmi Saikanth, Dhandapani Vaithiyanathan, Preeti Verma, Baljit Kaur, "Comparison and Analysis of Multiplier Using Different Adder Techniques", 2024 SixthInternational Conference on Electrical, Computer and Communication Technologies (ICECCT 2024), Chhattisgarh Swami Vivekananda Technical University, Bhilai, Chhattisgarh, India, 26th – 28th, June 2024.
- Swant Arya, Dhandapani Vaithiyanathan, Baljit Kaur, "Performance Analysis of Low Ambipolar Current Tunnel Field Effect Transistor", 2024 SixthInternational Conference on Electrical, Computer and Communication Technologies (ICECCT 2024), Chhattisgarh Swami Vivekananda Technical University, Bhilai, Chhattisgarh, India, 26th – 28th, June 2024.
- Utsav Kumar, Pratik Parihar, Dhandapani Vaithiyanathan, Preeti Verma, Baljit Kaur, "Analysis and Performance Evaluation of CFAR Algorithms and Computational Assessment on CPU, GPU and Numba", 2024 Sixth International Conference on Electrical, Computer and Communication Technologies (ICECCT 2024), Chhattisgarh Swami Vivekananda Technical University, Bhilai, Chhattisgarh, India, 26th – 28th, June 2024.
- Nikhil Kadiyan, Preeti Verma, D. Vaithiyanathan, "Study and Analysis of Plant Disease Identification Models", 2024 International Conference on Integrated Circuits, Communication, and Computing Systems (ICIC3S), Indian Institute of Information Technology Una, Himachal Pradesh, India, 08th – 09th, June 2024.
- Vipasha Thakur, Dhandapani Vaithiyanathan, Preeti Verma, Baljit Kaur, "A Comparative Evaluation of Intrusion Detection Systems: ICVAE *vs.* CVAE", 2024 International Conference on Advances in Modern Age Technologies for Health and Engineering Science (AMATHE), PES Institute of Technology and Management (PESITM), Shivamogga, Karnataka, India, pp. 1 – 6, 16th – 17th, May 2024. DOI: 10.1109/AMATHE61652.2024.10582127
- Emmanuel Rahkoyo, Sonam Yangdol, Baljit Kaur, Dhandapani Vaithiyanathan, Preeti Verma, "Hardware Analysis on NVDLA Organizational Settings", 2024 International Conference on Advances in Modern Age Technologies for Health and Engineering Science (AMATHE), PES Institute of Technology and Management (PESITM), Shivamogga, Karnataka, India, pp. 1 – 7, 16th – 17th, May 2024. DOI: 10.1109/AMATHE61652.2024.10582124
- Anuraj V, Dhandapani Vaithiyanathan, "Performance Analysis of Multiplier with Different Bits Size for MAC unit", 2024 International Conference on Advances in Modern Age Technologies for Health and Engineering Science (AMATHE), PES Institute of Technology and Management (PESITM), Shivamogga, Karnataka, India, pp. 1 – 6, 16th – 17th, May 2024. DOI: 10.1109/AMATHE61652.2024.10582134
- Mohit Meena, Dhandapani Vaithiyanathan, Preeti Verma, Baljit Kaur, "Hardware Analysis on NVDLA using RESNET50", 2024 International Conference on Advances in Modern Age Technologies for Health and Engineering Science (AMATHE), PES Institute of Technology and Management (PESITM), Shivamogga, Karnataka, India, pp. 1 – 5, 16th – 17th, May 2024. DOI: 10.1109/AMATHE61652.2024.10582140

- Sudhanshu Jha, Dhandapani Vaithiyanathan, Preeti Verma, Baljit Kaur, "An Automated Machine Learning Approach for Detecting Chronic Ischemic Heart Disease", 2024 International Conference on Advances in Modern Age Technologies for Health and Engineering Science (AMATHE), PES Institute of Technology and Management (PESITM), Shivamogga, Karnataka, India, pp. 1 – 6, 16th – 17th, May 2024. DOI: 10.1109/AMATHE61652.2024.10582156
- Kunal Goswami, Dhandapani Vaithiyanathan, Preeti Verma, Baljit Kaur, "Document verification using Blockchain", 2024 International Conference on Advances in Modern Age Technologies for Health and Engineering Science (AMATHE), PES Institute of Technology and Management (PESITM), Shivamogga, Karnataka, India, pp. 1 – 7, 16th – 17th, May 2024. DOI: 10.1109/AMATHE61652.2024.10582173
- J. Kruthika, Sonalika Singh, D. Vaithiyanathan, Preeti Verma, V. Jeyalakshmi, "Examining and Evaluating Voltage Level Shifter Circuit Performance Experimentally at Various Technology Nodes", 2nd International Conference on Advanced Technology in Engineering & Management (ICAATEM 2024), jointly organized by Saveetha Engineering College and De Montfort University Dubai, Dubai & Abu Dhabi, 18th – 25th March, 2024. (Best Paper Award)
- Jeyalakshmi. V, Arjun Chakkrapani, PreethaaJansirani, Kripa. S, Vaithiyanathan. D, "Obstacle Avoidance: Leveraging Transfer Learning and FPGA for Acceleration", 2nd International Conference on Advanced Technology in Engineering & Management (ICAATEM 2024), jointly organized by Saveetha Engineering College and De Montfort University Dubai, Dubai & Abu Dhabi, 18th – 25th March, 2024.
- Sonalika Singh, Dhandapani Vaithiyanathan, Preeti Verma, "A Comparative Analysis of Robust Level Shifters for High-Speed and Ultra-Low Power Applications", IEEE International Conference on Distributed Computing and Optimization Techniques (ICDCOT-2024), SJB Institute of Technology, Bengaluru, Karnataka, India, pp. 1 – 7, 15th – 16th March 2024. DOI: 10.1109/ICDCOT61034.2024.10515918.
- Ryan Ebenezer S, Kunaraj Kumarasamy, Dhandapani Vaithiyanathan, "FPGA Architecture for High-Speed TCAMBased Packet Parsing", Fourth International Conference on Advances in Electrical, Computing, Communications and Sustainable Technologies (ICAECT 2024), Shri Shankaracharya Technical Campus (SSTC), Bhilai, Chhattisgarh, India, pp. 1 – 6, 11th – 12th January 2024.DOI:10.1109/ICAECT60202.2024.10468979.
- Ashish Verma, Preeti Verma, Dhandapani Vaithiyanathan, "Simulation and Extraction of Dual-Gate TFET With Ferroelectric Material to Preserve Data", Fourth International Conference on Advances in Electrical, Computing, Communications and Sustainable Technologies (ICAECT 2024), Shri Shankaracharya Technical Campus (SSTC), Bhilai, Chhattisgarh, India, pp. 1 – 6, 11th – 12th January 2024.DOI:10.1109/ICAECT60202.2024.10469435. (Best Paper Award)
- Priyanshu Agrawal, Vandana Devi Wangkheirakpam, Dhandapani Vaithiyanathan, "Hetero-Stacked Source Tunnel FET-Driven Biosensing Application with Enhanced Sensitivity", Fourth International Conference on Advances in Electrical, Computing, Communications and Sustainable Technologies (ICAECT 2024), Shri Shankaracharya Technical Campus (SSTC), Bhilai, Chhattisgarh, India, pp. 1 – 5, 11th – 12th January 2024.DOI: 10.1109/ICAECT60202.2024.10469105. (Best Paper Award)

- Utsav Kumar, Pratik Parihar, Dhandapani Vaithiyanathan, Muniraj Manigandan, "Real-Time 3D Bounding Box Estimation with RCNN-Resnet101 and Adaptive Projection Matrices", Fourth International Conference on Advances in Electrical, Computing, Communications and Sustainable Technologies (ICAECT 2024), Shri Shankaracharya Technical Campus (SSTC), Bhilai, Chhattisgarh, India, pp. 1 – 5, 11th – 12th January, 2024.DOI:10.1109/ICAECT60202.2024.10468965.
- Dhandapani Vaithiyanathan, Britto Pari James, KaruthapandianMariammal, "A High-Speed Computational Pipeline Single MAC-Based VLSI Architecture for Real-Time Signal and Image Processing", Fourth International Conference on Advances in Electrical, Computing, Communications and Sustainable Technologies (ICAECT 2024), Shri Shankaracharya Technical Campus (SSTC), Bhilai, Chhattisgarh, India, pp. 1 – 6, 11th – 12th January 2024.DOI: 10.1109/ICAECT60202.2024.10469571.
- V. Kumar, R. Srivastava, Anuj K. Sharma, YK Prajapati, "Tunable plasmonic refractive index sensor based on enhanced photonic spin Hall effect" in the proceedings of IEEE Applied Sensing Conference (APSCON), January 22-24, 2024 (DOI: https://doi.org/10.1109/APSCON60364.2024.10465867).
- Implementation and Performance Analysis of Vertical Stacked Double Gate TFET for Gas Sensing Applications, Divya kanojia, Madhulika Verma, Vibhash Chodhuary, Sachin Agrawal, ICPEICES, DTU,May 2024.
- Performance Analysis of GaSb/InAs Heterojunction TFET for Gas Sensing Applications, Narender Singh Shekhawat, Madhulika Verma, and Sachin Agrawal, ICECSP, NIT Delhi.
- A Compact Super Wideband Antenna with Dual Band Notched Characteristics for 5G Applications, Himanshu Nagpal , Sachin Agrawal, ICPEICES, DTU May 2024.
- An Enhanced Car Parking Detection Using YOLOv8 Deep Learning Capabilities, Vishnu Shankar, Vibhav Singh, Vibhash Choudhary, Sachin Agrawal, Bhaskar Awadhiya, ICECSP, NIT Delhi.
- Vaibhav Yadav, Sanskar Kumar, Atul Goyal, Sidharth Bhatla, Geeta Sikka, Amandeep Kaur, "Integrated Violence and Weapon Detection using Deep Learning", IEEE Conference on First International Conference on Pioneering Developments in Computer Science & Digital Technologies, 2024 (Paper Accepted in Conference)
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