

**JANUARY
2026**

THE NEWSLETTER

DEPARTMENT OF CSE

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About: The legacy behind Excellence

GL Bajaj Institute of Technology and Management: A Premier Institution in North India

GL Bajaj Institute of Technology and Management, Greater Noida, is one of the leading self-financed educational institutions in the Delhi-NCR region. Established under the esteemed Rajeev Memorial Academic Welfare Society (Registered under the Societies Registration Act, 1860), the institute is approved by the All India Council for Technical Education (AICTE), Ministry of Education, Government of India, and is affiliated with Dr. A.P.J. Abdul Kalam Technical University (AKTU), Lucknow.

GL Bajaj stands out not only for its academic rigor but also for its commitment to nurturing well-rounded individuals equipped with the skills and values required for a successful future. The institute consistently maintains one of the highest pass percentages among engineering and management colleges affiliated with AKTU in the Noida and Greater Noida region.

Over the past eight years, GL Bajaj has secured a distinguished position in AKTU university results and is widely recognized among the top institutions in North India.





Institutional & Departmental Ethos

Vision of the Institute

To be an institute of repute, providing globally competent and socially sensitive professionals

Mission of the Institute

- To equip with the latest technologies to be globally competitive professionals.
- To inculcate qualities of leadership, professionalism, corporate understanding and executive competence.
- To imbibe and enhance human values, ethics and morals in our students.

Department Vision

M1 : Developing a strong mathematical & computing skill set among the students.

M2 : Extending the role of computer science and engineering in diverse areas like Internet of Things (IoT), Artificial Intelligence & Machine Learning and Data Analytics.

M3 : Imbibing the students with a deep understanding of professional ethics and high integrity to serve the Nation.

M4 : Providing an environment to the students for their growth both as individuals and as globally competent Computer Science professionals with encouragement for innovation & start-up culture.

Program Specific Outcomes (PSOs)

PSO1 : Students will be able to use problem solving skills to develop efficient algorithmic solutions.

PSO2 : Students will be able to develop solutions for a given problem in the area of artificial intelligence, data analytics, Computer Vision and IOT through a conducive environment and infrastructure.

Program Educational Objectives (PEOs)

PEO 1 : Graduate will work in the area of Application Software Development, Artificial Intelligence & Machine Learning, Data Analytics, and Internet of Things.

PEO 2 : Graduates will become successful software professionals with leadership and managerial quality in the modern software industry based on their strong skills on theoretical and practical foundation.

PEO 3 : Graduate will exhibit professional ethics and moral value with capability of working as an individual and as a team to contribute towards the need of industry and society



Institutional & Departmental Ethos

Knowledge and Attitude Profile (WK)

WK1.A systematic, theory-based understanding of the natural sciences applicable to the discipline and awareness of relevant social sciences.

WK2.Conceptually-based mathematics, numerical analysis, data analysis, statistics and formal aspects of computer and information science to support detailed analysis and modelling applicable to the discipline.

WK3.A systematic, theory-based formulation of engineering fundamentals required in the engineering discipline.

WK4.Engineering specialist knowledge that provides theoretical frameworks and bodies of knowledge for the accepted practice areas in the engineering discipline; much is at the forefront of the discipline.

WK5.Knowledge, including efficient resource use, environmental impacts, whole-life cost, re-use of resources, net zero carbon, and similar concepts, that supports engineering design and operations in a practice area.

WK6.Knowledge of engineering practice (technology) in the practice areas in the engineering discipline.

WK7.Knowledge of the role of engineering in society and identified issues in engineering practice in the discipline, such as the professional responsibility of an engineer to public safety and sustainable development.

WK8.Engagement with selected knowledge in the current research literature of the discipline, awareness of the power of critical thinking and creative approaches to evaluate emerging issues.

Ethics, inclusive behavior and conduct. Knowledge of professional ethics, responsibilities, and norms of engineering practice. Awareness of the need for diversity by reason of ethnicity, gender, age, physical ability etc. with mutual understanding and respect, and of inclusive attitudes.



Institutional & Departmental Ethos

Program Outcomes (POs)

Engineering Graduates will be able to:

PO1.Engineering Knowledge: Apply knowledge of mathematics, natural science, computing, engineering fundamentals and an engineering specialization as specified in WK1 to WK4 respectively to develop to the solution of complex engineering problems.

PO2.Problem Analysis: Identify, formulate, review research literature and analyze complex engineering problems reaching substantiated conclusions with consideration for sustainable development. (WK1 to WK4)

PO3.Design/Development of Solutions: Design creative solutions for complex engineering problems and design/develop systems/components/processes to meet identified needs with consideration for the public health and safety, whole-life cost, net zero carbon, culture, society and environment as required. (WK5)

PO4.Conduct Investigations of Complex Problems: Conduct investigations of complex engineering problems using research-based knowledge including design of experiments, modelling, analysis & interpretation of data to provide valid conclusions. (WK8).

PO5.Engineering Tool Usage: Create, select and apply appropriate techniques, resources and modern engineering & IT tools, including prediction and modelling recognizing their limitations to solve complex engineering problems. (WK2 and WK6)

PO6.The Engineer and The World: Analyze and evaluate societal and environmental aspects while solving complex engineering problems for its impact on sustainability with reference to economy, health, safety, legal framework, culture and environment. (WK1, WK5, and WK7).

PO7.Ethics: Apply ethical principles and commit to professional ethics, human values, diversity and inclusion; adhere to national & international laws. (WK9)

PO8.Individual and Collaborative Team work: Function effectively as an individual, and as a member or leader in diverse/multi-disciplinary teams.

PO9.Communication: Communicate effectively and inclusively within the engineering community and society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations considering cultural, language, and learning differences

PO10.Project Management and Finance: Apply knowledge and understanding of engineering management principles and economic decision-making and apply these to one's own work, as a member and leader in a team, and to manage projects and in multidisciplinary environments.

PO11.Life-Long Learning: Recognize the need for, and have the preparation and ability for i) independent and life-long learning ii) adaptability to new and emerging technologies and iii) critical thinking in the broadest context of technological change. (WK8)



Visionary Voice



**Dr. Manas Kumar
Mishra
Director, GLBITM**

*“The goal of education
is the advancement of
knowledge and the
dissemination of
truth.”*



It gives me immense pleasure to connect with our students and faculty through the monthly newsletter of the Department of Computer Science and Engineering. This platform reflects not only academic progress but also the collective spirit of innovation, discipline, and excellence that defines GL Bajaj.

In an era where technology evolves at an unprecedented pace, each new day presents fresh challenges and opportunities. It is the need of the hour to continuously upgrade our skills, adopt innovative strategies, and remain aligned with emerging industry trends. At GL Bajaj, we remain committed to strengthening our academic foundation while fostering research, innovation, and practical application of knowledge. Our focus is not only on creating new avenues of learning but also on transforming ideas into real-world technological solutions that contribute to societal and professional growth.

I firmly believe that students who walk the guided path laid by our institution will carry forward the skills, values, and experiences gained here throughout their lives. Our objective is to ignite the potential within every learner and nurture them through a balanced blend of technical competence, hands-on exposure, and strong ethical values. By promoting a culture of critical thinking, resilience, and independent learning, we aim to shape future-ready professionals who are also responsible citizens.

I extend my best wishes to the Department of Computer Science and Engineering for their continued efforts in academic excellence and innovation. I encourage our students to remain curious, disciplined, and committed to making a meaningful and positive impact in the world.



From the HOD's Desk Computer Science

Warm greetings to all of you!

It gives me immense pleasure to present this edition of the Department of Computer Science & Engineering's newsletter. This platform not only celebrates the accomplishments of our department but also serves as a bridge that connects us all—students, faculty, alumni, and stakeholders—with a shared sense of pride and progress.

In today's fast-paced, technology-driven world, where the boundaries between nations and disciplines are dissolving rapidly, it becomes essential to stay ahead with knowledge, skill, and adaptability. With globalization and competition shaping our future, our department strives to keep pace with emerging trends in technology, science, and education.

Let us continue this journey together with curiosity in our minds and courage in our hearts.

Warm regards,

Dr. Sansar Singh Chauhan
Head of the Department
Computer Science & Engineering



**Dr. Sansar Singh
Chauhan**
**Head of the
Department
Computer Science &
Engineering**

*“It's all about the
mindset and hard
work you put in.”*





Editorial Crew

Message from the Editorial Board Coordinator

It gives me immense pleasure to present the monthly Edition of the much-awaited CSE Department Newsletter. This newsletter serves as a platform to highlight the academic achievements, innovative initiatives, research contributions, and vibrant activities of our department.

With each edition, we aim to capture the spirit of progress and showcase the dedication of our faculty, students, and staff.



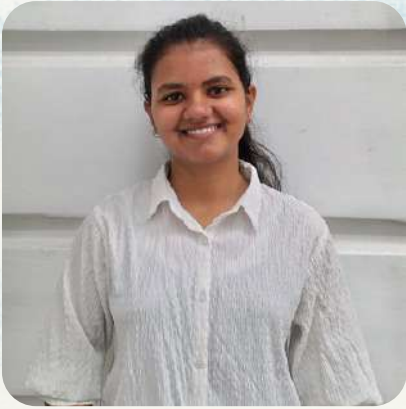
I extend my sincere gratitude to all contributors, editors, and coordinators who have worked diligently to bring this newsletter to life. I also encourage students and faculty to actively participate in future editions by sharing their achievements, ideas, and creative inputs.

Together, let us continue to build a culture of learning, innovation, and excellence.

Mr. Shikhar Pandey
Editorial Board Coordinator
Department of Computer Science & Engineering
GL Bajaj Institute of Technology and Management



Editorial Crew



SHUBHANJALI



PRIYA GOEL



NAINSI MOTIYAN



REHAN SHAMIM



MAHEK SINGHAL



SHRUTI DIXIT



VAIBHAV



Student Achievement

Placement Highlight->



GL Bajaj Institute of Technology and Management (GLBITM) takes immense pride in celebrating the exceptional achievement of our shining star, **Shubh Saxena**, who has secured an impressive ₹30 Lakh per annum package at Meesho. This outstanding milestone is a testament to his unwavering dedication, technical excellence, and relentless pursuit of success.

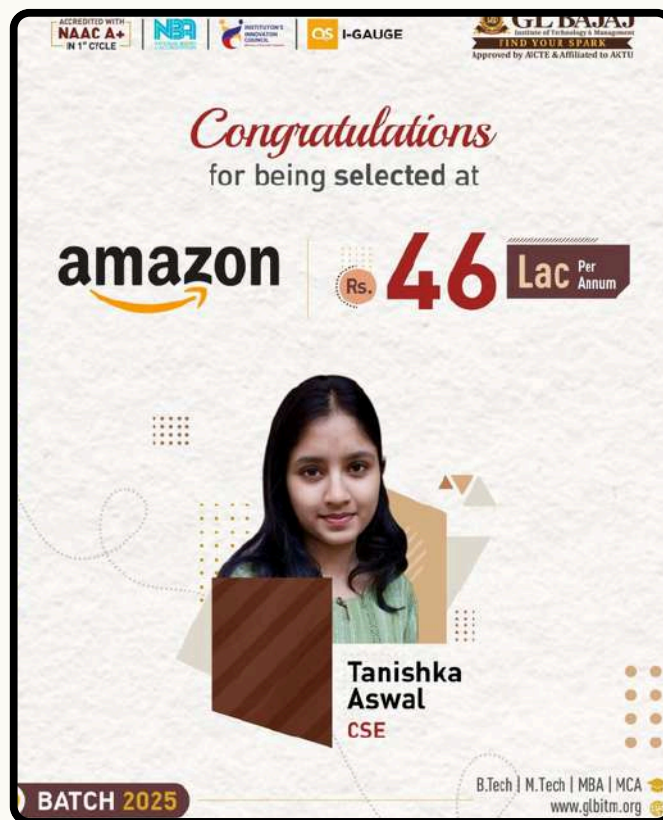
Shubh's accomplishment reflects not only his individual brilliance but also the strong academic foundation, industry-oriented training, and mentorship culture fostered at GL Bajaj. His journey serves as an inspiration to fellow students, motivating them to aim high and strive for excellence.

Heartiest congratulations, Shubh! You have truly made the entire GL Bajaj family proud, and we wish you continued success and greater achievements in your professional journey ahead.



Student Achievement

Placement Highlight->



GL Bajaj Institute of Technology & Management (GLBITM) proudly congratulates **Tanishka Aswal**, an outstanding student of B.Tech (Computer Science & Engineering), Batch 2025, on securing an incredible placement at Amazon through the campus recruitment drive. This remarkable achievement at a dream package stands as a testament to her hard work, perseverance, and technical excellence.

GL Bajaj takes immense pride in the accomplishments of its B.Tech students and remains committed to nurturing talent that meets global industry standards. Tanishka's success reflects the strong academic environment, continuous mentorship, and career-focused training provided by the institute.

Sharing her reflections, Tanishka expressed:

“GL Bajaj stood by me from my very first day on campus to achieving my career milestones. The mentorship, discipline, and encouragement I received helped build my confidence and shaped me into an industry-ready professional.”

We extend our heartfelt congratulations to Tanishka and wish her continued success and greater milestones in her professional journey ahead.



Student Achievement

Placement Highlight->



GL Bajaj Institute of Technology & Management (GLBITM) proudly congratulates **Shreya Prowal, Aksh Singh, and Ajit Verma** of B.Tech, Batch 2026, on securing impressive placements at Primathon through the campus recruitment drive. This remarkable achievement reflects their dedication, perseverance, and strong technical foundation, while also highlighting the institute's commitment to academic excellence and industry readiness. GL Bajaj takes immense pride in the success of its students and wishes them continued growth and success in their professional journeys. Sharing their reflections, the achievers expressed, "From day one in the classroom to securing our final placement, GL Bajaj stood as a constant pillar of support. The knowledge, discipline, and encouragement we gained here built our confidence and prepared us for the professional world. We are proud to be shaped by GL Bajaj."



Student Achievement

Placement Highlight->



GL Bajaj Institute of Technology & Management (GLBITM) proudly congratulates **Aditya Kushwaha** and **Chandra Prakash Singh** of B.Tech, Batch 2026, on securing remarkable placements at MU Sigma through the campus recruitment drive at a dream package. This outstanding achievement highlights their dedication, technical competence, and consistent efforts, while also reflecting the institute's commitment to academic excellence and industry-focused training. GL Bajaj takes immense pride in the success of its students and wishes them the very best in their future endeavours. Sharing their reflections, the achievers expressed, "From the moment our academic journey began to the day we stepped into our professional roles, GL Bajaj stood beside us with support. The knowledge, discipline, and encouragement we gained here strengthened our confidence and prepared us for real-world challenges. We move forward with deep appreciation and pride, grateful to be shaped by GL Bajaj."



Student Achievement

Student Innovation in Environmental Technology: Patent Publication Achievement

(12) PATENT APPLICATION PUBLICATION	(21) Application No.202511098984 A
(19) INDIA	
(22) Date of filing of Application :14/10/2025	(43) Publication Date : 05/12/2025
(54) Title of the invention : PORTABLE MICROPLASTIC DETECTION SYSTEM	
(51) International classification	:G01N0021640000, G01N0033180000, G01N0015060000, G01N0001100000, G01N0015022700
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:
Filing Date	:01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA
(71)Name of Applicant :	1)G.L. Bajaj Institute of Technology and Management Address of Applicant :Plot No. 2, APJ Abdul Kalam Road, Knowledge Park III Greater Noida Uttar Pradesh India Greater Noida Uttar Pradesh India
(72)Name of Inventor :	1)Dr. Nikhil Sharma 2)Mahi Agarwal 3)Kratika Nigam 4)Jyotish Trigun 5)Himanshu Patel
(57) Abstract :	The invention provides a portable, low-cost, IoT-enabled microplastic detection system (100) for real-time monitoring of water bodies. It includes a water sampling unit (110) with a microfilter (111) to trap particles, and a detection chamber (120) with UV/white LED illumination (121) and a camera or photodiode sensor (122) to capture images of microplastics. Optionally, Nile Red dye (123) can enhance fluorescence-based detection. A processing unit (130), such as Raspberry Pi or Arduino (131), analyzes images using Python/OpenCV software (132) and lightweight ML models (133) to count and size particles. Processed data is transmitted via an IoT module (140) over Wi-Fi, GSM, or LoRa (142) to a cloud platform (141), where a dashboard (150) displays particle count, size distribution, timestamp, GPS location (151), and contamination alerts. The system is scalable, energy-efficient, and field-deployable, providing a cost-effective, real-time alternative to laboratory-based microplastic detection and enabling large-scale environmental monitoring and timely interventions. No. of Pages : 11 No. of Claims : 9

A significant student achievement has been recorded with the successful publication of a patent titled **“Portable Microplastic Detection System”** in The Patent Office Journal on 05 December 2025, credited to **Mahi Aggarwal**. The invention introduces a low-cost, portable, and IoT-enabled system for real-time detection and monitoring of microplastics in water bodies.

The system integrates a water sampling unit, optical microscope, LED illumination, and a camera sensor to capture microplastic images, which are processed using Python and OpenCV-based machine learning algorithms. The analyzed data, including particle count, size distribution, timestamps, and GPS location, is transmitted to a cloud platform via an IoT module. This scalable solution offers a cost-effective alternative to traditional laboratory methods and supports efficient environmental monitoring and water quality management.



Faculty Recognition

IEEE 7th International Conference on Computing, Communication and Automation

SOLVEXPERT: Real-Time Equation Writing Using Hand Gestures on a Virtual Canvas

Publisher: IEEE

[Cite This](#)



Vrinda Sachdeva ; Shikhar Prateek Pandey ; Arun Kumar ; Supriya ; Seema Verma [All Authors](#)

The Department of Computer Science and Engineering extends its sincere congratulations to the authors on the successful development and presentation of **SolveXpert**, an innovative gesture-based problem-solving system that advances inclusive and hands-free digital interaction.

SolveXpert effectively addresses the limitations of conventional input methods by enabling users to solve mathematical and scientific problems through real-time hand gestures. By integrating OpenCV, MediaPipe, and Google Gemini Pro, the system accurately captures hand movements, converts them into mathematical expressions, and delivers AI-driven, step-by-step solutions across mathematics, physics, and chemistry. This seamless fusion of computer vision and artificial intelligence demonstrates strong technical depth and thoughtful system design.

The project stands out for its emphasis on accessibility, user engagement, and sustainability. By offering a contactless interface, SolveXpert supports users with physical limitations and environments requiring hands-free interaction, while also promoting intuitive and interactive learning experiences. The approach reflects a forward-looking vision of human-computer interaction that prioritizes inclusiveness and practical impact.

Authors:

Vrinda Sachdeva

Shikhar Prateek Pandey

Arun Kumar

Supriya

Seema Verma

Published in: 2025 IEEE 7th International Conference on Computing, Communication and Automation (ICCCA).



Professional Milestone

Faculty Research Publication in SCI-Indexed Journal - Dr. Sonal Gandhi

The Department of Computer Science & Engineering is proud to announce that **Dr. Sonal Gandhi** has published a research paper titled **“Reversible Data Hiding for Color Images Using a Novel Self-Attention Based CNN Predictor and Error Adjustment”** in the reputed SCI-indexed journal *Signal, Image and Video Processing* (Springer Nature).

In this research, Dr. Gandhi proposed a new self-attention-based CNN model to improve prediction accuracy in reversible data hiding for color images. The proposed method increases data embedding capacity while maintaining high image quality.

The experimental results show significant improvement over existing methods, including better prediction accuracy and an average PSNR improvement of about 1.2 dB. The research is useful for secure image communication and data protection applications.

The department congratulates Dr. Sonal Gandhi on this remarkable achievement and appreciates her valuable contribution to research in Image Processing and Secure Multimedia Systems.





Faculty Recognition

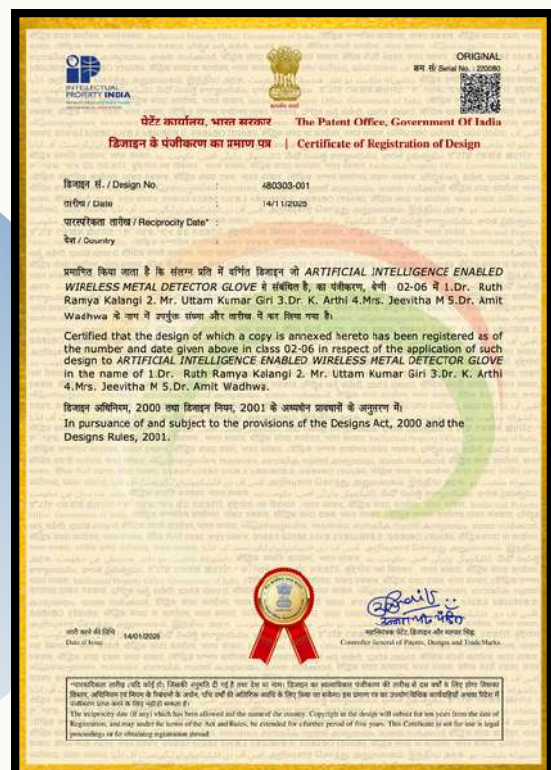
Artificial Intelligence Enabled Wireless Metal Detector Glove - Dr.Amit Wadhwa Design Patent Granted

The Department of Computer Science & Engineering is proud to announce that **Dr. Amit Wadhwa** has been granted an Indian Design Patent by the Intellectual Property India, Government of India, for the innovative design titled **“Artificial Intelligence Enabled Wireless Metal Detector Glove.”**

This patented design presents a smart wearable glove that integrates artificial intelligence techniques with wireless metal detection technology. The glove is designed to improve the accuracy and efficiency of security screening while ensuring ease of use and portability.

The proposed system can be effectively used in airports, shopping malls, hotels, high-security events, government offices, and other sensitive locations. The innovation aims to enhance detection reliability, operational efficiency, and user convenience for security personnel.

The CSE Department congratulates Dr. Amit Wadhwa on this significant achievement and appreciates his contribution towards innovative research and technological development.





Faculty Recognition

Scholarly Contribution Mr. Shikhar Prateek Pandey



The Department of Computer Science & Engineering is proud to share that **Mr. Shikhar Prateek Pandey** served as a **Reviewer for research papers at the World Conference on Computational Science and Technology**.

The conference was organized by the Department of Computer Science & Engineering and technically co-sponsored by the IEEE Computational Intelligence Society, and was held at Chandigarh University on 26th–27th March 2026.

As a reviewer, Mr. Pandey contributed by evaluating research papers and ensuring the quality and originality of the submissions. His participation reflects his active involvement in academic and research activities at the international level.

The CSE Department congratulates **Mr. Shikhar Prateek Pandey** on this achievement and appreciates his valuable contribution to the research community.



Faculty Recognition

Dr. Pushpa : Session Chair at the 2nd International Conference on Next-Generation Communication and Computing (NGCC-2025)



The Department of Computer Science & Engineering is proud to share that **Dr. Pushpa** has been awarded a Certificate of Appreciation for her valuable contribution as a Session Chair at the 2nd International Conference on Next-Generation Communication and Computing (**NGCOM-2025**).

The conference was held on 18th–19th December 2025 at GL Bajaj Institute of Technology & Management, Greater Noida, organized by the Research & Development Cell and the Department of Computer Science Engineering (AI/ML).

Dr. Pushpa played an important role in managing and guiding technical sessions during the conference. Her contribution helped in the smooth conduct of the event and in encouraging research discussions among participants.

The CSE Department congratulates Dr. Pushpa on this achievement and appreciates her continued dedication towards academic excellence and research activities.



Faculty Recognition

CSE Department Celebrates Research Success at ICCCA->



The Department of Computer Science & Engineering is proud to share that **Ms Vrinda Sachdeva** has been awarded a Certificate of Presenter for her valuable research contribution at the 2025 IEEE 7th International Conference on Computing, Communication and Automation (ICCCA).

The conference was held from November 28th–30th, 2025, at Galgotias University, Greater Noida, and was financially and technically co-sponsored by the IEEE IAS Society and IEEE UP Section.

Vrinda presented her innovative paper entitled **"SolveXpert: Real-Time Equation Writing Using Hand Gestures on a Virtual Canvas"** (Paper ID: 425). Her work focuses on the intersection of human-computer interaction and automation, showcasing advanced technical skills in the field of computing.

The CSE Department congratulates Vrinda on this significant international achievement and commends her dedication to research and innovation. We look forward to her continued success in the field of technology.



Faculty Recognition

International Conference Reviewer Dr. Vrinda Sachdeva



The Department of Computer Science & Engineering is pleased to share that **Ms. Vrinda Sachdeva** served as a Reviewer at **the International Conference on Artificial Intelligence and Emerging Technologies**, organized under the banner of Institute of Electrical and Electronics Engineers.

The conference was held at XIM University, Bhubaneswar, from 28–30 August 2025. In her role as a reviewer, Ms. Sachdeva evaluated research papers and contributed to maintaining the academic quality and technical standards of the conference.

Her involvement in such a prestigious international conference reflects her academic expertise and active participation in research activities.

The CSE Department congratulates Ms. Vrinda Sachdeva on this achievement and appreciates her contribution to the research community.



Faculty Recognition

Contribution as Session Chair Dr. Payal Garg



The Department of Computer Science & Engineering is pleased to share that **Dr. Payal Garg** served as a **Session Chair** at the **International Conference on Modern Electronics Devices and Intelligent Communication Systems**.

The conference was technically co-sponsored by the IEEE Computational Intelligence Society and held from 11th–13th December 2025 at GL Bajaj Institute of Technology & Management.

Dr. Garg chaired three technical sessions during the conference, contributing to the smooth conduct of paper presentations and academic discussions. His role ensured high-quality interaction among researchers and participants.

The CSE Department congratulates Dr. Payal Garg on this achievement and appreciates his active involvement in academic and research activities.

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