

"Studying AI is exploring the  
future of human potential."



*#July 2025*  
EDITION

# PRADYUMAN

*NEWSLETTER | COMPUTER SCIENCE ENGINEERING - AI*



PRADYUMAN

# CONTENT

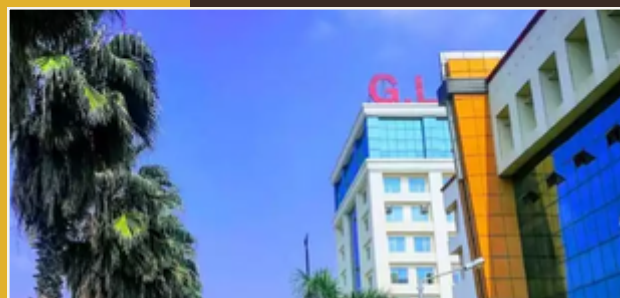
<b>About the Institute</b>	Page 1
<b>Director's Message</b>	Page 2
<b>HOD's Message</b>	Page 3
<b>Editorial Team</b>	Page 4
<b>About Vividhata Club</b>	Page 5
<b>Club Events</b>	Page 6
<b>Student Achievements</b>	Page 13
<b>Faculty Appreciation</b>	Page 16
<b>Thank You Note</b>	Page 48

# ABOUT THE INSTITUTE



GL Bajaj Institute of Technology and Management, Greater Noida, is a premier institution affiliated with Dr. A.P.J. Abdul Kalam Technical University.

Renowned for its practical learning, innovation, and research, it offers modern infrastructure, expert faculty, and strong industry ties, ensuring excellent placements and holistic student development for career and societal contributions.





Message from Director, GLBITM

## Dr. Preeti Bajaj

---

Welcome to GL Bajaj, where academics and activities seamlessly blend to shape future technocrats and business leaders. Our vision is to become a leading center for teaching, research, and innovation in Engineering and Technology through unwavering commitment to quality education and training.

At GL Bajaj, we instill strength of character, confidence, technical competence, and leadership in our students. This is achieved through a dedicated faculty, a state-of-the-art library, advanced labs, and modern teaching methods that make learning engaging and effective. Recognizing the challenges posed by globalization and rapid technological advancements, GL Bajaj proactively adapts to equip students with the skills and knowledge needed to excel in a competitive, ever-changing world.

Our enviable academic record and exceptional placement success are a testament to the versatile talents of our student community. Beyond academics, we promote faculty development, seminars, workshops, and conferences to ensure continuous growth and development for both students and faculty.

I warmly invite you to join GL Bajaj, where your journey toward innovation, excellence, and lifelong success begins. Together, let us shape a future full of opportunities and achievements.



Message from Head of CSE-AI, GLBITM

# Dr. Sanjeev Kumar Pippal

---

G.L. Bajaj Institute of Technology and Management is dedicated to instilling strong ethical values of integrity, respect, discipline, and clear decision-making skills in our students, fostering a life-long process of growth.

Central to our mission is a commitment to building collaborations with industry, academia, and the broader community. By promoting meaningful exchanges, we aim to bridge the gap between theory and practice, ensuring our graduates are well-equipped to face the challenges and opportunities of the current generation.

We uphold the values of excellence, inclusivity, integrity, and respect for diversity in all our endeavors. Our focus on continuous improvement and innovation drives us to exceed the expectations of our students, faculty, staff, and stakeholders.

Through our steadfast commitment to our mission, we aim to be recognized as a leading institution, producing exceptional professionals and leaders who positively impact society. Together, we are shaping the future of education and empowering the next generation of innovators and change-makers.

Meet the Editorial Team



*Ms. Bhumika Nirmohi*  
*Vividhata Club Coordinator*



*Mrs. Ankita Gupta*  
*Faculty Editor*



*Ananya Ganjoo*  
*Student Editor*



*Ayush Tiwari*  
*Student Editor*



# ABOUT DEPARTMENT OF CSE-AI

In today's globalized world, where competition is fierce, we at GL Bajaj proactively address emerging trends by staying ahead in technology, science, and society.

With a strong academic track record, hands-on industrial training, and industry interactions, we ensure our students are ready for the workforce. Our placement record reflects the technical and managerial skills of our diverse student community.

We are committed to excellence through Faculty Development Programs, Seminars, Workshops, and Conferences, keeping everyone at the forefront of their fields.

On behalf of GL Bajaj, we invite you to join us in this journey of growth and success.



---

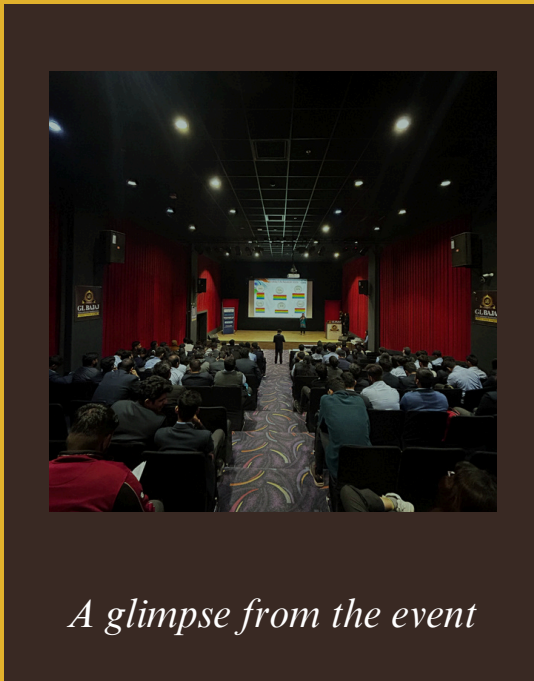
# CLUB EVENTS

---

• *An Overview*



# SAFER INTERNET EVENT



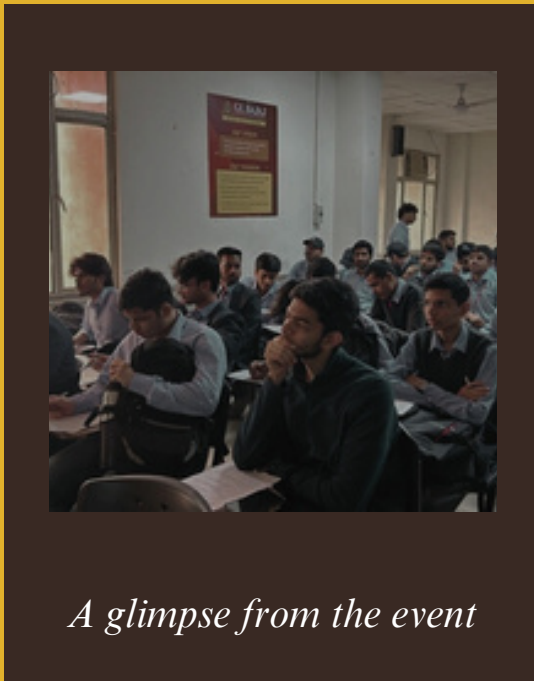
*A glimpse from the event*

GL Bajaj Institute of Technology & Management hosted a Safer Internet Day workshop on February 11, 2025, in collaboration with C-DAC Noida under MeitY's ISEA Project. Guest lecturer Kajal Kashyap led an engaging session on cyber hygiene, online threats, and responsible internet usage, empowering attendees with essential cybersecurity awareness.



## NATIONAL SCIENCE DAY

LEADERSHIP TALK  
BY  
MS. DEEKSHA RAI,  
MANAGER, GLBCRI

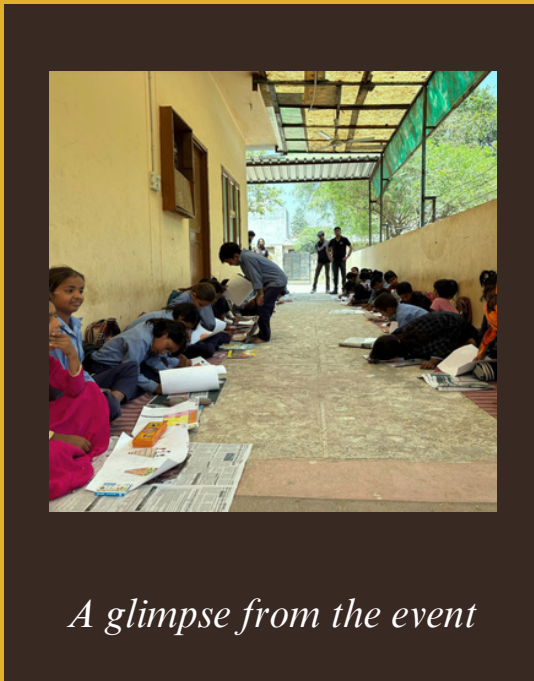


*A glimpse from the event*

On 28th February 2025, Vividhata Club celebrated National Science Day with a focus on promoting entrepreneurship and innovation. The event highlighted the role of startups in driving economic growth, job creation, and sustainability. Participants gained insights into overcoming challenges like funding and competition, explored government schemes and incubation programs, and developed skills in business planning and marketing.



# GOODWILL ACTIVITY AT APNA SCHOOL NGO



*A glimpse from the event*

On 3rd April 2025, Vividhata Club visited Apna School, an NGO offering free education to underprivileged children. The day was filled with joyful activities like painting, dancing, and fun games. Volunteers also distributed stationery, making the experience both exciting and meaningful for the kids, leaving behind smiles and happy memories.

Join us **LIVE**

For an informative seminar on

# How to Secure Scholarships to Study Abroad ?



SPEAKER

**Narain Gaur**

Founder Enrol Abroad

+91-9953291748

**PICK YOUR SLOT NOW**

TECHNICAL EVENT

## STUDY ABROAD

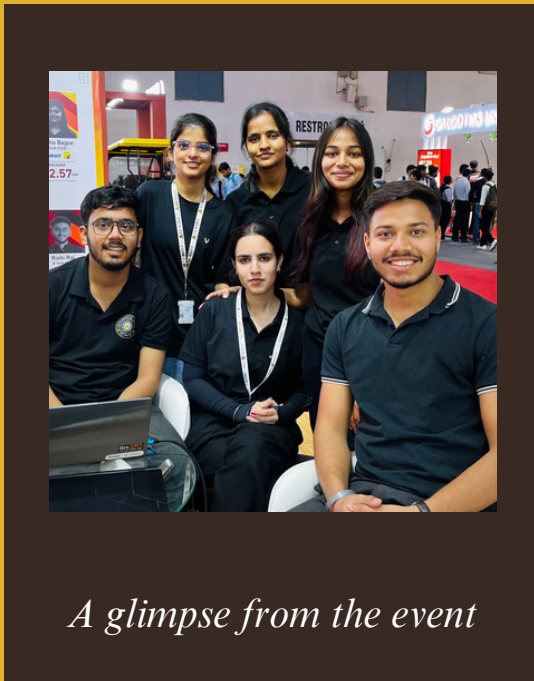


On April 18, 2025, GL Bajaj Institute hosted the Study Abroad with Scholarship seminar in collaboration with Enrol Abroad. Led by expert Mr. Narain Gaur, the event guided students on admissions, scholarships, SOPs, exams, and visa processes for studying abroad. Interactive discussions and personalized advice empowered students to pursue global education opportunities with clarity and confidence.



# SHIKSHA EXPO

SUMMER EDITION 2025



*A glimpse from the event*

Bharat Shiksha Expo 2025 spanned three days, featuring various fun introduction sessions like ghibli art, quizzes and password generating games, interaction with students and teacher along with hackathon on the first day called Ideathon, where students showcased their creative ideas and implementation skills to impress the judges and highlight their innovation.



# FAREWELL BATCH 2025



— CIAO: ALWAYS AND FOREVER



*A glimpse from the event*

The Farewell for the Class of 2025 at GL Bajaj Institute was a heartfelt celebration featuring speeches, award ceremonies, and vibrant cultural performances. With music, dance, and open-stage acts by juniors and seniors, the event honored students' achievements and bonds. Esteemed guests offered inspiring words, wishing graduates success in their future endeavors.

# EXCELLENCE WALL

---

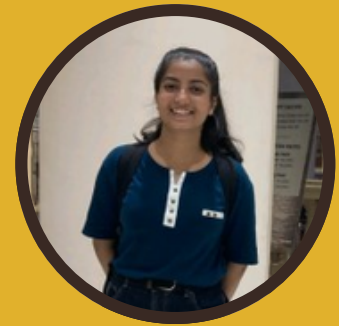
• *Student Achievements*



*Rishi Varshney*  
[Batch 2026]



*Shashank Parmar*  
[Batch 2026]



*Sanchita Singh*  
[Batch 2025]

*Rishi Varshney*, a talented student from the B.Tech (CSE AI) program at GL Bajaj Institute of Technology and Management, Batch 2026 has been successfully placed at *Autodesk* for an outstanding package of **₹40 Lakh CTC**, marking a strong start to his career in the tech industry with expertise in Artificial Intelligence.

*Shashank Parmar*, another B.Tech student specializing in Computer Science and Artificial Intelligence (CSE AI) from GL Bajaj Institute of Technology and Management, Batch 2026, has secured placement at *Autodesk* as well.

*Sanchita Singh*, a B.Tech student specializing in Computer Science and Artificial Intelligence (CSE AI) from GL Bajaj Institute of Technology and Management (Batch 2025), has been successfully placed at *Morgan Stanley* with an impressive offer of **₹29 Lakh CTC**, showcasing her exceptional talent and academic excellence.

*Outstanding  
Placements*



**GL BAJAJ**  
FIND YOUR SPARK  
Approved by AICTE & Affiliated to AKTU

*Congratulations*  
for being Selected at

**Morgan Stanley**



Sanchita Singh  
B.Tech (CSE AI)

**Rs. 29**  
Lac CTC

**BATCH 2025**    B.Tech | M.Tech | MBA | MCA    [www.glbitm.org](http://www.glbitm.org)



**GL BAJAJ**  
FIND YOUR SPARK  
Approved by AICTE & Affiliated to AKTU

EXCELLENT START OF **BATCH 2026** PLACEMENTS  
**CONGRATULATIONS**  
FOR BEING SELECTED AT

**AUTODESK**



 ANUBHAV JAIN CSE AI & ML	 KUMAR DEV CSE AI & ML	 PARAM SAXENA CSE DS	 RAGHURAJ YADAV CSE AI & ML	 RISHI CSE AI
 SACHIN SACHDEVA CSE	 SHASHANK PARMAR CSE AI	 UDIT DWIVEDI CSE AI & ML		

## *DomeWatch*



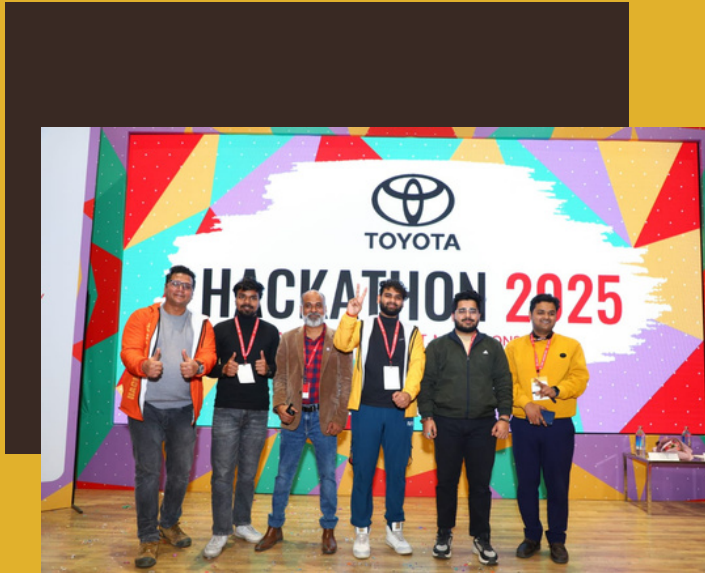
*Team members included*  
*Sneha (Leader & Integration)*  
*Sarthak (Backend & APIs)*  
*Ameya (Frontend)*  
*Param (AI/ML Systems).*

At the Bharat Shiksha Expo Hackathon, with an added member, *Shashank Parmar*, the team won again, earning praise for its role in public safety and emergency response.



Team *DomeWatch* achieved major wins with their *AI-powered anti-drone system* at two national hackathons. At *Maha Hackathon 1.0*, organized by the Government of Maharashtra on the theme “*Use of Drones in Disaster Management*”, they secured *Runners-Up and ₹1 Lakh prize*. Their solution, DomeWatch, uses *YOLOv8 vision detection, RF analysis, targeted jamming, and offline edge processing with multilingual alerts for disaster response*.





A team of talented GL Bajaj students secured *3rd position* at the *Toyota Hackathon* held at the institute. Competing against numerous innovative solutions, they impressed the judges with their creative approach and technical expertise, showcasing strong problem-solving skills in an industry-focused challenge.

GL Bajaj students achieved *1st position* at *Startathon*, a premier hackathon event organized during *Bharat Shiksha Expo 2025*. Their solution stood out for its originality, scalability, and real-world impact, earning top honors and recognition for fostering innovation and entrepreneurial spirit.





A team comprising *Akshat Kumar, Kushagra, and Rishi* showcased exceptional creativity at *Galgotia's Creators Hackathon*, a *30-hour content creation marathon*. With no sleep and no breaks, they produced 12 high-quality content pieces, impressing influencer judges with their originality. Their hard work earned them the *Category Prize for Best VFX* and a *₹7,500 cash reward*.

# FACULTY CONTRIBUTION

---

• *An Overview*

Dr. Sanjeev Kumar Pippal  
HOD- CSEAI, GLBITM



- **Institution:** *Accurate Business School (NAAC Accredited).*
- **Type:** Certificate of Participation.
- **Affiliation:** GL Bajaj Institute of Technology and Management.
- **Program:** One-week Faculty Development Program (FDP).
- **Topic:**
  - Transforming Research Methodology
  - Advanced Tools, AI Integration, and Innovative Practices for Future Ready Research.
- **Dates:** 02nd – 07th June 2025.



Mr. Kaleemur Rehman  
Assistant Professor, GLBITM



- **Institution:** *Accurate Business School (NAAC Accredited).*
- **Type:** Certificate of Participation.
- **Affiliation:** GL Bajaj Institute of Technology and Management.
- **Program:** One-week Faculty Development Program (FDP).
- **Topic:**
  - Transforming Research Methodology
  - Advanced Tools, AI Integration, and Innovative Practices for Future Ready Research.
- **Dates:** 02nd – 07th June 2025.



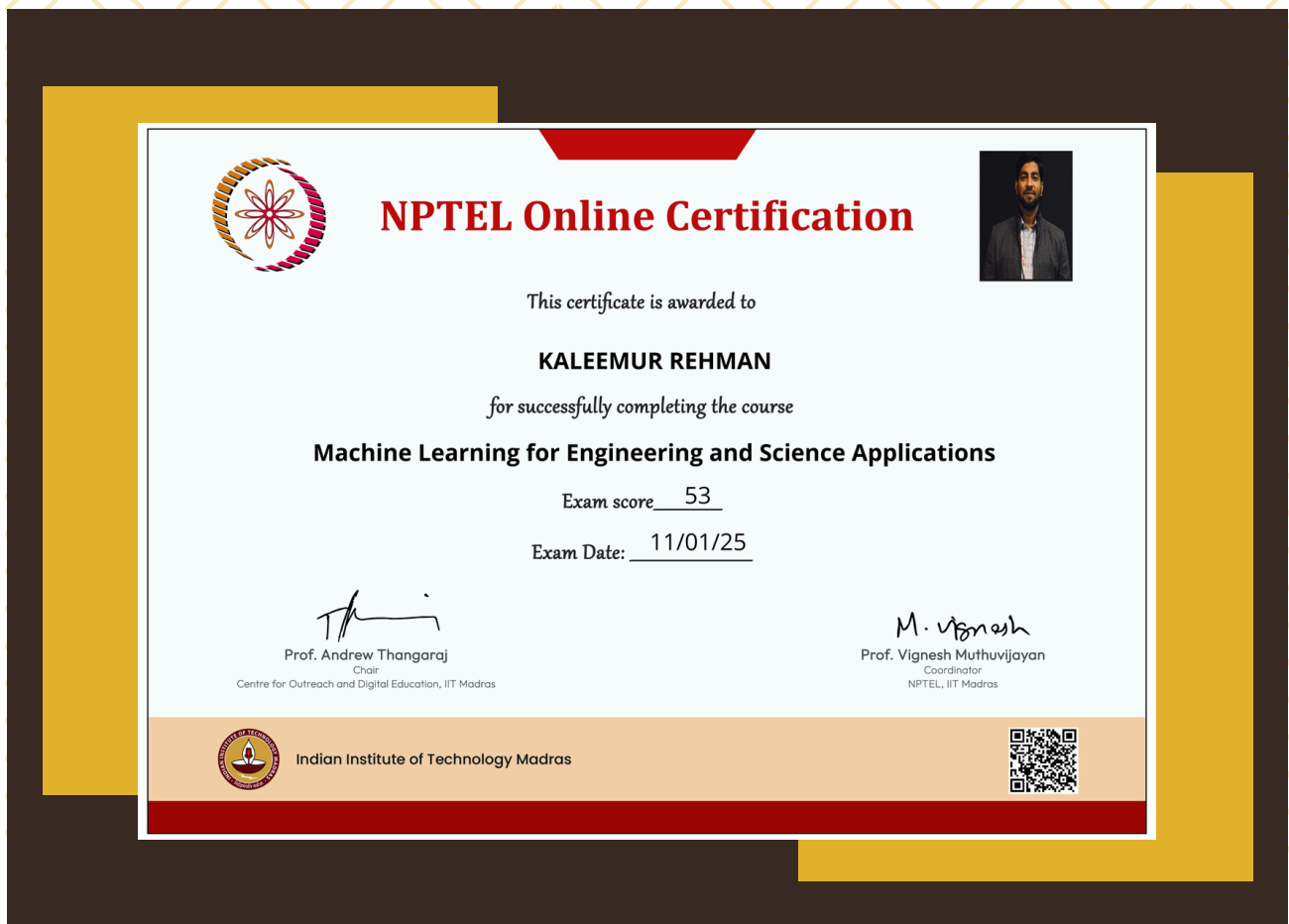
- **FDP Participation:** *Actively participated in the Faculty Development Program (FDP) held from 21–25 May, focusing on advanced teaching methodologies and emerging technologies.*
- **Skill Enhancement:** Engaged in sessions that emphasized AI, cybersecurity, and pedagogical innovations, aiming to integrate cutting-edge research into classroom teaching.
- **Professional Development:** Strengthened expertise in next-gen teaching tools, digital learning platforms, and industry-driven research areas, enhancing both academic and practical knowledge.
- **Collaborative Growth:** Contributed to discussions on bridging the gap between academia and industry, with a focus on applied research and student innovation initiatives.



- **Conference Reviewer:** *Served as a Reviewer for the 13th International Conference on Recent Trends in Computing (ICRTC-2025).*
- **Organizer Details:** The conference was organized by SRM Institute of Science and Technology, Delhi-NCR Campus, in association with Springer, held on 4–5 July 2025.
- **Contribution:** Provided expert evaluation and feedback on research papers, contributing to the quality and success of the conference.



- *Successfully completed the NPTEL Online Certification course on “Machine Learning for Engineering and Science Applications.”*
- Earned the certification with an **exam score of 53**, conducted by **IIT Madras**.
- Gained foundational and applied knowledge in **machine learning** concepts, algorithms, and real-world applications.
- Certification **dated 11 January 2025**, signed by **Prof. Andrew Thangaraj** and **Prof. Vignesh Muthuvijayan** of IIT Madras.



Mr. Abhishek Singh  
Assistant Professor, GLBITM



- **Institution:** *Accurate Business School (NAAC Accredited).*
- **Type:** Certificate of Participation.
- **Affiliation:** GL Bajaj Institute of Technology and Management.
- **Program:** One-week Faculty Development Program (FDP).
- **Topic:**
  - Transforming Research Methodology
  - Advanced Tools, AI Integration, and Innovative Practices for Future Ready Research.
- **Dates:** 02nd – 07th June 2025.



- **Training Program:** Completed the Faculty Training Program (FTP'25) on Generative AI.
- **Date & Venue:** Conducted on 4th April 2025 at VVDN Technologies Pvt. Ltd., Manesar.
- **Focus:** Enhanced understanding of GenAI concepts, applications, and industry trends.
- **Recognition:** Received a Certificate of Appreciation from VVDN Technologies for active participation and skill enhancement.



- **Conference Participation:** *Represented G. L. Bajaj Institute of Management & Technology, Greater Noida at the 3rd International Conference on Disruptive Technologies (ICDT-2025).*
- **Research Contribution:** Contributed to scholarly discussions and advancements in emerging disruptive technologies.
- **Recognition:** Earned acknowledgment for academic and research engagement at a prestigious international platform.



Mr. Satyam Kumar Saini

Assistant Professor, GLBITM



- **Institution:** *Accurate Business School (NAAC Accredited).*
- **Type:** Certificate of Participation.
- **Affiliation:** GL Bajaj Institute of Technology and Management.
- **Program:** One-week Faculty Development Program (FDP).
- **Topic:**
  - Transforming Research Methodology
  - Advanced Tools, AI Integration, and Innovative Practices for Future Ready Research.
- **Dates:** 02nd – 07th June 2025.



Ms. Manisha Bhati  
Assistant Professor, GLBITM



- **Institution:** *Accurate Business School (NAAC Accredited).*
- **Type:** Certificate of Participation.
- **Affiliation:** GL Bajaj Institute of Technology and Management.
- **Program:** One-week Faculty Development Program (FDP).
- **Topic:**
  - Transforming Research Methodology
  - Advanced Tools, AI Integration, and Innovative Practices for Future Ready Research.
- **Dates:** 02nd – 07th June 2025.



Mr. Rudra Kumar Sinha

Assistant Professor, GLBITM



- **Institution:** *Accurate Business School (NAAC Accredited).*
- **Type:** Certificate of Participation.
- **Affiliation:** GL Bajaj Institute of Technology and Management.
- **Program:** One-week Faculty Development Program (FDP).
- **Topic:**
  - Transforming Research Methodology
  - Advanced Tools, AI Integration, and Innovative Practices for Future Ready Research.
- **Dates:** 02nd – 07th June 2025.



- **Conference Participation:** *Represented G. L. Bajaj Institute of Management & Technology, Greater Noida at the 3rd International Conference on Disruptive Technologies (ICDT-2025).*
- **Research Contribution:** Contributed to scholarly discussions and advancements in emerging disruptive technologies.
- **Recognition:** Earned acknowledgment for academic and research engagement at a prestigious international platform.



Mrs. Ankita Gupta  
Assistant Professor, GLBITM



- **Institution:** *Accurate Business School (NAAC Accredited).*
- **Type:** Certificate of Participation.
- **Affiliation:** GL Bajaj Institute of Technology and Management.
- **Program:** One-week Faculty Development Program (FDP).
- **Topic:**
  - Transforming Research Methodology
  - Advanced Tools, AI Integration, and Innovative Practices for Future Ready Research.
- **Dates:** 02nd – 07th June 2025.



Mr. Suresh Kumar  
Assistant Professor, GLBITM



- **Institution:** *Accurate Business School (NAAC Accredited).*
- **Type:** Certificate of Participation.
- **Affiliation:** GL Bajaj Institute of Technology and Management.
- **Program:** One-week Faculty Development Program (FDP).
- **Topic:**
  - Transforming Research Methodology
  - Advanced Tools, AI Integration, and Innovative Practices for Future Ready Research.
- **Dates:** 02nd – 07th June 2025.



- **Institution:** *Amity University, Noida (Amity Centre for Artificial Intelligence - ACAI).*
- **Type:** Certificate of Participation.
- **Program:** Workshop on Generative AI for Academic Workflow Automation.
- **Duration:** 09th June – 20th June 2025.
- **Organized by:** Amity Centre for Artificial Intelligence (ACAI).
- **Certificate Number:** ACAI/Workshop/2025/P/95, dated 24/06/2025.
- **Signatories:**
  - Dr. Ashish Mani – Convener, Professor at Amity Innovation and Design Centre.
  - Prof. (Dr.) M.K. Dutta – Addl. Pro Vice Chancellor & Director, ACAI.



Mr. Himanshu Nandanwar  
Assistant Professor, GLBITM



- **Institution:** *Accurate Business School (NAAC Accredited).*
- **Type:** Certificate of Participation.
- **Affiliation:** GL Bajaj Institute of Technology and Management.
- **Program:** One-week Faculty Development Program (FDP).
- **Topic:**
  - Transforming Research Methodology
  - Advanced Tools, AI Integration, and Innovative Practices for Future Ready Research.
- **Dates:** 02nd – 07th June 2025.





### *Participation of GLBITM in SuperAI 2025, Singapore (17–19 June 2025)*

- A six-member delegation from GL Bajaj Institute of Technology and Management, including **Mr. Himanshu Nandanwar (Assistant Professor (CSE-AI), Head – IPR & Entrepreneurship Cell)** and five students (notably Aman Sharma and Digvijay Singh from CSE-AI, Batch 2021-25), participated in **SuperAI 2025 at Marina Bay Sands, Singapore**.
- The global event focused on AI advancements, covering themes like generative AI, cybersecurity, robotics, and ethical AI.
- **Key Contributions:**
  - **Project Showcase: “AI-Powered Threat Detection and Response System”** featuring real-time anomaly detection, predictive cyber threat analysis, and SIEM integration. It received positive feedback for its enterprise applications.
  - **Hackathon Participation:** In the SuperAI NEXT Hackathon, the team developed an AI-based Preliminary Diagnostic Assistant with NLP-based symptom checking, federated learning for data privacy, and real-time dashboards. Although not in the final awards, it was recognized for social impact.

Mr. Mohit Kumar  
Assistant Professor, GLBITM



- **Conference Participation:** *Represented G. L. Bajaj Institute of Management & Technology, Greater Noida at the 3rd International Conference on Disruptive Technologies (ICDT-2025).*
- **Research Contribution:** Contributed to scholarly discussions and advancements in emerging disruptive technologies.
- **Recognition:** Earned acknowledgment for academic and research engagement at a prestigious international platform.



Mr. Piyush Kushwaha

Assistant Professor, GLBITM



- **Event:** *Faculty Updation Program on Cryptography for Information Security (CIS-25)*
- **Title of the Programme:** “Faculty Updation Program on Cryptography for Information Security (CIS-25)”
- **Event Dates:** 07th March 2025 – 11th March 2025
- **Organized By:** ISEA-III project of Meity, Government of India by Innovation Hub
- **Conducted By:** Dr. A.P.J. Abdul Kalam Technical University, Lucknow.
- **Role:** Attendee / Participant
- **Recognition:** Received certificate of appreciation



- **Event:** *Faculty Training Program(FTP'25) on GENAI*
- **Title of the Programme:** Methods of Research and Publication Ethics
- **Event Dates:** 4th April 2025
- **Topic:** GEN-AI
- **Organized By:** Education and Educational Management Department
- **Conducted By:** VVDN Technologies Pvt Ltd, Manesar
- **Role:** Attendee / Participant
- **Type:** Certificate of Appreciation



- **Institution:** *Wipro (TalentNext)*.
- **Program:** Digital Skills Readiness Program.
- **Certification:** Wipro Certified Faculty.
- **Awarded To:** Piyush Kushwaha.
- **Achievement:**
  - Successfully cleared the TalentNext certification assessment.
  - Recognized as a mentor for Project-Based Learning (PBL) in Java Full Stack.



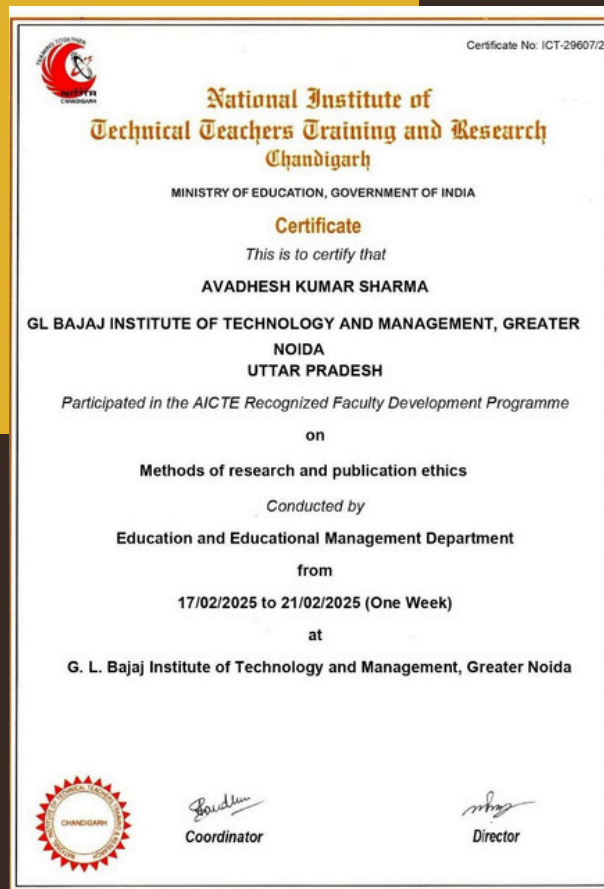
- **Conference Participation:** *Represented G. L. Bajaj Institute of Management & Technology, Greater Noida at the 3rd International Conference on Disruptive Technologies (ICDT-2025).*
- **Research Contribution:** Contributed to scholarly discussions and advancements in emerging disruptive technologies.
- **Recognition:** Earned acknowledgment for academic and research engagement at a prestigious international platform.



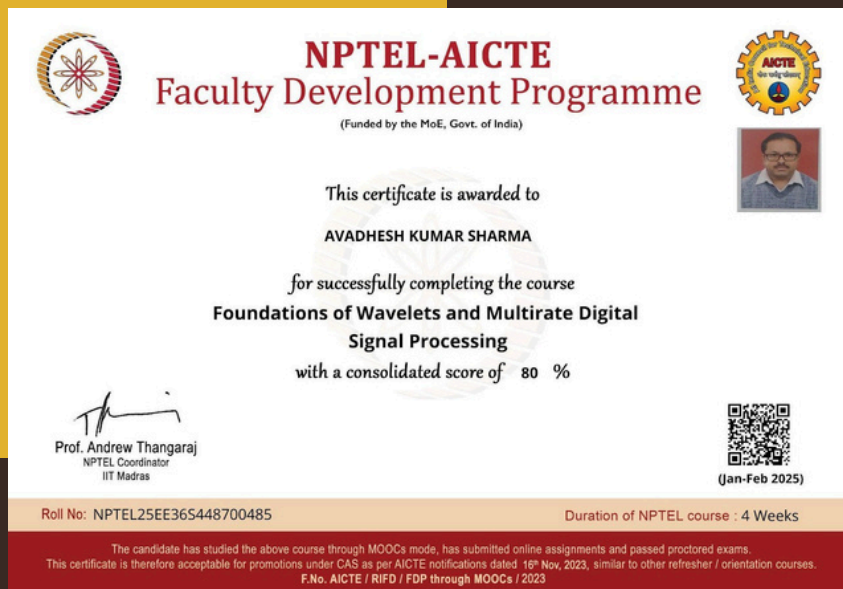
Dr. Avadhesh Kumar Sharma  
Assistant Professor, GLBITM



- **Event:** *AICTE Recognized Faculty Development Programme (FDP)*
- **Title of the Programme:** Methods of Research and Publication Ethics
- **Event Dates:** 17th February 2025 – 21st February 2025 (One Week)
- **Organized By:** Education and Educational Management Department
- **Conducted By:** G.L. Bajaj Institute of Technology and Management
- **Role:** Attendee / Participant
- **Recognition:** Received *Certificate of Appreciation* for the role



- **Course Title:** *Foundations of Wavelets and Multirate Digital Signal Processing*
- **Platform:** NPTEL (Jan–Feb 2025 Session, 4-week course)
- **Score:** 55.5/75 (Final score: 80/100 with G/8 assignments submitted)
- **Performance:** Successfully completed with strong marks



**NPTEL-AICTE**  
**Faculty Development Programme**  
(Funded by the MoE, Govt. of India)

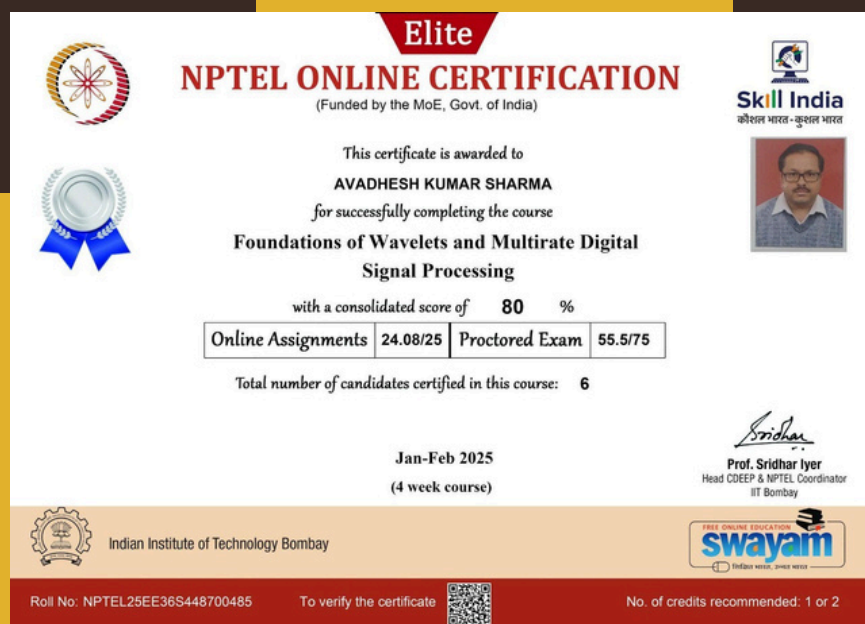
This certificate is awarded to  
**AVADHESH KUMAR SHARMA**

for successfully completing the course  
**Foundations of Wavelets and Multirate Digital  
Signal Processing**  
with a consolidated score of **80 %**

Prof. Andrew Thangaraj  
NPTEL Coordinator  
IIT Madras

Roll No: NPTEL25EE36S448700485      Duration of NPTEL course : 4 Weeks

The candidate has studied the above course through MOOCs mode, has submitted online assignments and passed proctored exams.  
This certificate is therefore acceptable for promotions under GAS as per AICTE notifications dated 16<sup>th</sup> Nov, 2023, similar to other refresher / orientation courses.  
F.No. AICTE / RIFD / FDP through MOOCs / 2023



**Elite**  
**NPTEL ONLINE CERTIFICATION**  
(Funded by the MoE, Govt. of India)

This certificate is awarded to  
**AVADHESH KUMAR SHARMA**

for successfully completing the course  
**Foundations of Wavelets and Multirate Digital  
Signal Processing**  
with a consolidated score of **80 %**

Online Assignments	24.08/25	Proctored Exam	55.5/75
--------------------	----------	----------------	---------

Total number of candidates certified in this course: **6**

Jan-Feb 2025  
(4 week course)

Prof. Sridhar Iyer  
Head CDEEP & NPTEL Coordinator  
IIT Bombay

Indian Institute of Technology Bombay

Roll No: NPTEL25EE36S448700485      To verify the certificate      No. of credits recommended: 1 or 2

- **Research Paper:** Co-authored “Automated COCOA Disease Detection Using CNN: A Case Study of VSD and Other Pathogens” at RAMSITA 2025.
- **Key Work:** Built a CNN-based model using DenseNet-19, achieving 99.1% accuracy on 1200 leaf images for early cocoa disease detection.
- **Impact:** Aimed at improving crop productivity and reducing economic losses through automated disease identification.
- **Collaboration:** Worked with researchers from GL Bajaj, Parul University, United University, and LPU, receiving a Certificate of Appreciation.



---

Ms. Bhumika Nirmohi

Assistant Professor, GLBITM



- **Deepfake Detection Research:** Contributed to a detailed comparative analysis of modern deepfake detection methods, exploring CNN, GAN, CLIP, and hybrid CNN-LSTM models. Implemented a CNN-based detection framework achieving 99.68% accuracy, while evaluating datasets like DFDC, FaceForensics++, and CelebA to analyze real-world performance and generalization challenges.
- **Innovations in AI Security:** Proposed optimized hybrid models and transfer learning approaches for detecting manipulated media. Highlighted limitations of existing methods and suggested future directions for improving adaptability, efficiency, and real-time detection capabilities.
- **OTP Fraud Prevention System:** Co-developed a next-generation AI-powered OTP verification and fraud detection framework integrating behavioral biometrics, anomaly detection, multi-channel OTP delivery, and location-based verification using Twilio and Google Distance Matrix APIs. Achieved fast response times (1.2s OTP generation, 1.8s verification) and improved resistance to SIM-swap, phishing, and malware-based attacks.
- **Practical Impact & Scalability:** The OTP fraud prevention model was designed for high scalability and seamless integration with existing e-banking and e-commerce systems, demonstrating real-world feasibility and reliability.
- **Broader Contributions:** Showcased expertise in AI, deep learning, cybersecurity, and real-time fraud detection, contributing impactful solutions that strengthen digital media authenticity and financial transaction security.

## Enhancing Business safety and security through Next Gen Fraud by generating OTP

Kohliji Smita  
CSE, Artificial Intelligence  
GLBITM, AKTU  
Greater Noida, India  
csa21104@glbim.ac.in

Gaurav Mishra  
CSE, Artificial Intelligence  
GLBITM, AKTU  
Greater Noida, India  
csa21106@glbim.ac.in

Harsh Singh  
CSE, Artificial Intelligence  
GLBITM, AKTU  
Greater Noida, India  
csa21113@glbim.ac.in

Ayushman Vats  
CSE, Artificial Intelligence  
GLBITM, AKTU  
Greater Noida, India  
csa21141@glbim.ac.in

Bhumiika Nimrobhi  
CSE, Artificial Intelligence  
GLBITM, AKTU  
Greater Noida, India  
bhumiika.nimrobhi@glbim.ac.in

**Abstract:** Digital transactions have recently seen dramatic expansion which requires social resolution of their basic security requirements. One-time passwords serve as an authentication method to shield system against fraud yet attackers find weaknesses that cause financial damages to users. Traditional defensive measures prove ineffective against the present-day threats which combine OTP interception with SIM swapping while also including phishing activities. This document consists of an advanced fraud detection mechanism to stop OTP security threats effectively. Real-time security systems work as proactive protectors through threat monitoring networks linked with authorization procedures which construct protected data defenses. A new implementation system will install advanced transaction security methods which prevent unapproved access together with fraudulent activities.

**Keywords:** Next-Generation Fraud Prevention, One-Time Password (OTP), Secure Transactions, Cybersecurity Tools, Anomaly Detection

### I. INTRODUCTION

The transformation of business fraud has become extensive because of modern technological developments. Modern security solutions and updated fraud prevention methods require immediate business investment due to the current marketplace conditions. Businesses experience significant monetary losses because traditional security frameworks struggle to stop contemporary security threats. The advancement of digital fraud schemes requires businesses to improve OTP transaction security because cybercriminals deliberately target digital systems. Cybercriminals detect weaknesses in traditional security systems thus making it urgent to develop new effective protection techniques. Mobile application security and encryption strategies prove to be the most efficient tools in protecting systems from hacking attempts along with phishing attacks and malware intrusions. The protective security measures deliver data encryption, which defends sensitive transaction information while decreasing the possibility of fraudulent activities. Real-time systems that examine SMS traffic function as essential components in stopping OTP fraud operations. Such systems identify irregular traffic patterns to detect the artificial inflation, which is a primary method fraudsters use to carry out their operations. Real-time detection capabilities in these security mechanisms confirm OTP authentication integrity to ensure the security measure stays reliable against unauthorized access.

Financial institutions should build stronger connections with cybersecurity experts because this will help them combat new potential threats in the market. Digital fraud protection requires continuous updates of security frameworks since cybercriminals develop their methods to evade defenses.

### II. EASE OF USE

- A. *Enhanced Security*  
A combination of Fraud Detection Layer with multi-factor authentication and Behavioral biometrics enables the system to efficiently decrease fraud and identify theft occurrences during OTP transactions.
- B. *Real-Time Fraud Detection*  
The Ability to analyze data in real time allows the system to detect fraudulent activities as they happen, ensuring immediate action to block unauthorized transactions and minimize financial losses.
- C. *Increased User Trust*  
Multi-channel OTP verification integrated within the system strengthens user confidence because it protects their sensitive information from fraudulent activities. Implementing additional security measures leads users to trust the system for conducting secure financial operations.
- D. *Scalability and Efficiency*  
The system has been engineered to process many transactions at once while delivering accurate results with minimal internet detections. This system maintains flexibility to join existing security systems so organizations can increase operations without facing security compromises.

### III. LITERATURE REVIEW

An MIT Technology Review article published by Tavo et al in 2023 delved into AI detection methods alongside their effects on industrial revolution in 2023. This investigation demonstrated AI security possibilities yet identified a crucial problem in technology advancement that could make their research useless in the near future.

The present situation demands continued scientific inquiry into this research field. Chief et al published a security analysis in the Journal of Cybersecurity during 2023 which examined authentic cybersecurity dangers to evaluate multiple security methods. The research study presented findings from multiple case examples to demonstrate how different fraud

9798-3315-1958-2755311.00 ©2025 IEEE 736

## Comparative Analysis of Deep-Fake Detection Methods

SAPUL ISLAM RAHMANI  
Department of Computer Science and Engineering (AI)  
G.L. Bajaj Institute of Technology and Management, Gr. Noida, India

TARUN PAL  
Department of Computer Science and Engineering (AI)  
G.L. Bajaj Institute of Technology and Management, Gr. Noida, India

VINEET CHAUDHARY  
Department of Computer Science and Engineering (AI)  
G.L. Bajaj Institute of Technology and Management, Gr. Noida, India

Ms. Bhumiika Nimrobhi  
Department of Computer Science and Engineering (AI)  
G.L. Bajaj Institute of Technology and Management  
Greater Noida, India

**Abstract:** The easy availability of deepfakes because of advancements in generative adversarial networks (GANs) and other deep learning models, has led to popularization of extremely realistic fake media which can easily be misused. This review paper gives a comparative analysis of different deepfake detection methods in images as well as videos format. It focuses on advanced methodologies like hybrid deep learning, surface anomaly detection, vision language adoption, and transfer learning. Different methods like CNN-LSTM, GAN-based approaches and architectures like CLIP, have different strengths in deepfake detection. Each method is assessed for its effectiveness in different real-world scenarios, generalization capabilities and performance with multiple datasets. We will also look into the shortcomings in every method. This analysis aims to find optimal deployment of these techniques and find which technique is optimal for detecting deepfakes to combat misuse and misinformation caused by such altered images and videos.

**Keywords:** Deepfakes, Generative Adversarial Networks, Hybrid deep learning, Convolutional Neural Networks (CNN), Contrastive Language-Image Pretraining (CLIP), Generalization, Long Short-Term Memory (LSTM).

### I. INTRODUCTION

The advancements in artificial intelligence have fuelled the rise of deepfakes. Images and videos are manipulated such that the facial expressions and voices become hard to distinguish from a real unmanipulated media. Deepfakes were initially developed for creative applications, but soon began to be misused by bad actors. Misinformation, identity theft, blackmailing and social manipulation are being done with the help of this technology. The growing threat has also driven research into deepfake detection methods that can identify altered videos and images. The strategies for deepfake detection vary widely, from traditional forensic techniques to deep learning models which exploit visual, temporal, and surface anomalies. CNN or Convolutional neural networks and hybrid models are used frequently. Each technique has its own strengths and limitations. However as deepfake technology advances and creates more convincing and hard to detect media, detection must also change to counter fake media.

This review paper provides a comparative analysis of different deepfake detection approaches, their effectiveness, limitations and real world applicability. By finding current capabilities and highlighting areas which require further research, this article aims to support the development of better deepfake detection techniques for the changing threat landscape.

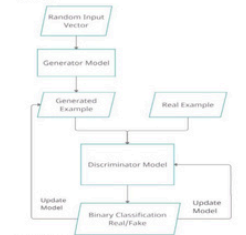


Fig. 1. Working of GAN

### II. LITERATURE REVIEW

Table 1 provides a comparative analysis between various contemporary methods and techniques for deepfake detection. It consists of 8 research papers by different authors utilizing different techniques. All these papers were published in 2022 - 2024, to give a representation to new methods of deepfake detection.

TABLE I. COMPARATIVE ANALYSIS

Paper Name	Author	Year	Methodology	Result (Accuracy)	Research Gap
Deepfake Detection Analyzing Hybrid Dataset Utilizing CNN and SVM [1]	Jacob Mathan, Lata Piyar, Dr. Rakesh Dixit, Dr. Monika Varamaha [1]	2022	CNN, SVM	CNN - 83.17% SVM - 81.69%	Generalization, Dependence on quality of data
Deep Fake Detection Using CV-Based LSTM with Pairwise Learning [2]	R. Saravanan Ram, M. Vaidh, Kumar, Tarun M. Asham,	2022	Deep Belief Network	F2F - 97.54% FV - 96.79% VV - 98.17%	Generalization, Extension to other media

9798-3315-1958-2755311.00 ©2025 IEEE 651

- **Conference Participation:** *Represented G. L. Bajaj Institute of Management & Technology, Greater Noida at the 3rd International Conference on Disruptive Technologies (ICDT-2025).*
- **Research Contribution:** Contributed to scholarly discussions and advancements in emerging disruptive technologies.
- **Recognition:** Earned acknowledgment for academic and research engagement at a prestigious international platform.



*A Sincere Thank You from  
The CSE-AI Department Newsletter Team!*

---

The AI Department newsletter team would like to extend our deepest appreciation for your generous support in ensuring the success of our latest newsletter.

We are truly grateful to the *AI Department* for offering us a platform to highlight the pioneering work and accomplishments in the realm of artificial intelligence.

We would like to give a special thanks to the *Director, HOD and faculty members*. Your guidance and contributions have been crucial in making this newsletter impactful.

Additionally, we would like to acknowledge the *Vividhata Club* for their steadfast support. Your dedication to fostering student success inspires us, and we believe this newsletter provides an excellent opportunity for students to explore both their technical and creative abilities.

Warm regards,  
*Editorial Team*  
*Department of CSE-AI*