



**Department of  
Computer & Communication Engineering  
School of Computer Science & Engineering**



**CCE PULSE**

**Even Semester 2026**

January – June 2026

Published: 27 August 2026

*Empowering Innovation • Research • Excellence*



**Department Newsletter**

Department of Computer & Communication Engineering  
School of Computer Science & Engineering  
Manipal University Jaipur

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## Editorial

### Editorial

Welcome to the **January–June 2026** edition of **CCE Pulse**, the official newsletter of the Department of Computer and Communication Engineering, Manipal University Jaipur. This newsletter highlights the academic achievements, research activities, workshops, expert lectures, technical events, outreach programs, publications, placements, and student accomplishments of the department during the Even Semester (January–June 2026).

CCE Pulse serves as a platform to showcase the collective efforts of our students, faculty members, researchers, alumni, and staff. It reflects our commitment towards academic excellence, innovation, research, industry interaction, and holistic development.

We sincerely thank every faculty member, student, and contributor whose enthusiasm and dedication made this newsletter possible. We hope you enjoy reading this edition and continue supporting the growth of our department.

### Editorial Board

| Chief Editor    | Associate Editors                              | Student Editors                |
|-----------------|------------------------------------------------|--------------------------------|
| Dr. Arjun Singh | Dr. Hema Shekhawat<br>Dr. Sandeep Kumar Sharma | Krishna Goyal<br>Manya Agrawal |

*Education is not just about acquiring knowledge; it is about inspiring innovation, creativity, and lifelong learning.*

— CCE Pulse Editorial Team

## HoD Message

### Message from the HoD's Desk



**Dr. Arjun Singh**  
Head of Department  
Department of CCE

Dear Students, Faculty Members, Alumni, and Readers,

It gives me immense pleasure to present the **January–June 2026** edition of **CCE Pulse**, the official newsletter of the Department of Computer and Communication Engineering, Manipal University Jaipur. This newsletter captures the significant academic, research, innovation, outreach, and student activities conducted during the even semester. The department continues its commitment towards quality education, industry collaboration, research excellence, innovation, and holistic development of students.

I congratulate all our faculty members, students, research scholars, staff, and alumni whose dedication and achievements have contributed immensely to the growth of our department.

I hope this edition inspires every reader and motivates our students to continue striving for excellence in academics, research, innovation, and social responsibility.

I extend my best wishes to everyone for a successful and prosperous future.

*Education is the foundation upon which innovation, leadership, and societal progress are built.*

— Head of Department

## About Us

### About the Department

The Department of Computer and Communication Engineering (CCE) at Manipal University Jaipur was established in 2015 with the vision of providing quality education in the emerging fields of Computer Engineering and Communication Engineering.

The department offers interdisciplinary programs by integrating Computer Science, Communication Systems, Artificial Intelligence, Cyber Security, Internet of Things (IoT), Cloud Computing, Data Science, Software Engineering, and Embedded Systems.

The department has been accredited by the National Board of Accreditation (NBA) and continues to promote excellence in teaching, research, innovation, and industry collaboration.

Faculty members actively contribute to high-impact research in Artificial Intelligence, Machine Learning, Wireless Communication, Computer Networks, Information Security, IoT, Software Engineering, and Computer Architecture.

State-of-the-art laboratories equipped with NVIDIA GPU Systems, Oracle Academy, Microsoft Azure, PARAM Shavak Supercomputer, IoT Laboratory, Networking Laboratory, and modern software platforms provide excellent learning opportunities.

The department continuously encourages innovation, entrepreneurship, project-based learning, research, industrial collaborations, internships, and student professional development.



### Department Highlights

- NBA Accredited Programme
- Highly Qualified Faculty Members
- Modern Computing Laboratories
- GPU Laboratory
- MoU with Red Hat Academy
- MoU with Cisco
- Industry Collaboration
- Strong Research Culture
- Excellent Placement Record
- Innovation and Startup Ecosystem
- Project-Based Learning

### Quick Facts

|                |                   |
|----------------|-------------------|
| Established:   | 2015              |
| Programs:      | • UG • PhD        |
| Accreditation: | NBA               |
| Faculty:       | Experienced       |
| Research:      | Multidisciplinary |
| Facilities:    | Smart Labs        |
| Industry:      | Collaborations    |
| Focus:         | Innovation        |
| Placement:     | Excellent         |

*Empowering Future Engineers Through Excellence in Education, Innovation and Research.*

*— Department of Computer and Communication Engineering*

## Vision and Mission

### Vision

*"Inculcate academic excellence and research aptitude for social development."*

### Mission

- Nurture the technical skillset of students to enable them to create innovative solutions.
- Sharpen problem-solving skills through project-based learning.
- Serve society by inspiring young minds for research, innovation, and ethical values.

## Key Features

- Well-equipped laboratories
- Smart classrooms with modern teaching facilities
- Industry collaborations
- Research-driven curriculum
- NBA Accredited Program
- Strong placement support
- Modern IoT and AI laboratories
- Red Hat Academy and Oracle MoU
- Project-Based Learning (PBL)
- Student innovation ecosystem

## Department Statistics

30

Industry  
Collaborations

95%

Campus  
Placement

93%

Faculty with  
PhD

46

Startups

10 Cr

Scholarships

2015

Established

NBA

Accredited

AI

Research Labs



*Our vision is to nurture globally competent engineers through excellence in teaching, research, innovation, and ethical values.*

*— Department of CCE*

## Workshops & Events

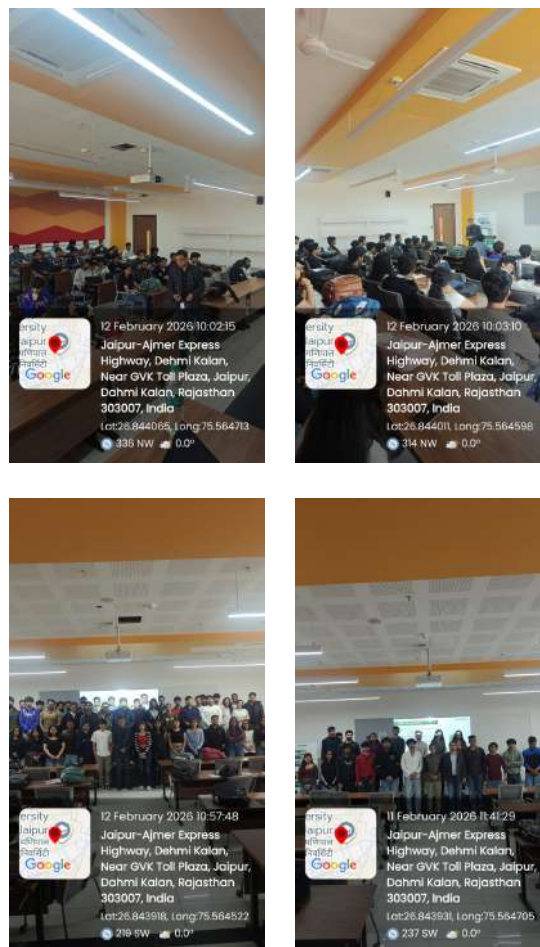
### Study Abroad Awareness and Career Guidance Program

**Date:** 11–12 February 2026

**Organized by:** Department of Computer and Communication Engineering, Manipal University Jaipur

**In Collaboration with:** Jamboree Education

**Coordinator:** Dr. Arvind Dhaka, Department International Coordinator



The Department of Computer and Communication Engineering, Manipal University Jaipur, in collaboration with **Jamboree Education**, organized a two-day **Study Abroad Awareness and Career Guidance Program** to familiarize students with higher education opportunities at international universities.

The program provided valuable guidance on **international universities, GRE, GMAT, SAT, IELTS, TOEFL, university selection, application procedures, scholarships, and visa processes**. Through interactive discussions and personalized guidance, students gained greater clarity about planning their academic journey and pursuing global career opportunities.

## THINK NEXT'26

**Organized by:** School of Computer Science and Engineering-2, Manipal University Jaipur

**In Collaboration with:** Directorate of Research and E-Cell

**Date:** 30 January–1 February 2026

**Venue:** LHC, Manipal University Jaipur

MANIPAL UNIVERSITY  
JAIPUR

SCHOOL OF COMPUTER SCIENCE AND ENGINEERING-2  
JOINTLY ORGANISED WITH DIRECTORATE OF RESEARCH AND E-CELL  
PRESENTS

# THINK NEXT'26

UNDER TECHIDEATE'26  
30th Jan – 1st Feb  
LHC, Manipal University Jaipur

Turn your ideas and projects into industry-ready outcomes with mentorship from MUJ's most experienced faculty.

What you bring  
New ideas, existing ideas & ongoing projects before 29<sup>th</sup> January

What you get  
Goodies for accepted papers & published IP  
Financial assistance for AI startups and patents by E-Cell  
Financial assistance for scopus indexed publications by DoR

STARTUP  
JOURNAL PUBLICATIONS  
CONFERENCE PUBLICATIONS  
COPYRIGHT & PATENT

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+91 70246 91712

SCAN THE QR TO REGISTER NOW

WHERE IDEAS BECOME OUTCOME

The School of Computer Science and Engineering-2, jointly with the Directorate of Research and E-Cell, organized **THINK NEXT'26**, a platform designed to transform innovative ideas and ongoing projects into industry-ready outcomes through mentorship from experienced faculty.

The event invited students to present innovative ideas, startups, research publications, and intellectual property initiatives, with opportunities including guidance for **conference and journal publications, startups, copyrights, patents, and research outcomes**.

## Little Smiles Big Hearts: A Child Welfare Connect Program

**Date:** 18 February 2026

**Venue:** APNA GHAR, Jaipur

**Organized by:** Department of Computer and Communication Engineering (CCE), in collaboration with DSW and NSS



The Department of Computer and Communication Engineering (CCE), School of Computer Science and Engineering, Manipal University Jaipur, organized a child welfare outreach activity at **APNA GHAR, Jaipur**. The initiative aimed to foster empathy, social responsibility, and awareness towards children in need.

MUJ students spent meaningful time with the children through **interactive conversations, games, storytelling, food distribution, and gift sharing**, creating moments of warmth and happiness while promoting the spirit of community service.

## Bridging Generations: A Day of Joy and Togetherness

**Date:** 18 February 2026

**Venue:** Asha Deep Sansthan, Mansarovar, Jaipur

**Organized by:** Department of Computer and Communication Engineering (CCE), in collaboration with DSW and NSS



The Department of Computer and Communication Engineering (CCE), School of Computer Science and Engineering, Manipal University Jaipur, organized an **Elderly Care Awareness** outreach activity at **Asha Deep Sansthan, Jaipur**, fostering empathy, understanding, and social responsibility among students.

Students spent meaningful time with the elderly residents through **conversations, light activities, storytelling, and refreshments**, creating moments of warmth and togetherness. The initiative helped bridge the generational gap while reinforcing the values of empathy, community service, and social responsibility.

## Faculty Development Programme on Institutional Governance and Academic Administration

**Date:** 23–27 March 2026

**Mode:** ICT (Online)

**Organized by:** Department of Computer and Communication Engineering, Manipal University Jaipur, together with MUJ TEC and HR

**In Association with:** National Institute of Technical Teachers Training and Research (NITTTR), Chandigarh

**Organizing Coordinators:** Dr. Manoj Kumar Sharma and Dr. Anshika Malsaria



The Department of Computer and Communication Engineering, Manipal University Jaipur, organized a five-day **AICTE-approved Faculty Development Programme (FDP)** on **Institutional Governance and Academic Administration**, in association with **NITTTR, Chandigarh**.

The programme focused on key areas including **higher education governance and policies, academic leadership and management, institutional administration, quality assurance and accreditation, student-centric administration, research administration and ethics, and emerging issues in higher education.**

A special session on **Effective Teaching-Learning Practices using Technology** was delivered by **Mr. Tanvir Singh**. The programme provided faculty members and academic administrators with valuable insights into strengthening institutional governance and academic administration.

## Expert Lectures

### Security Foundations: Cryptography Cloud Security and Network Vulnerability

**Date:** 19–20 March 2026

**Mode:** Online

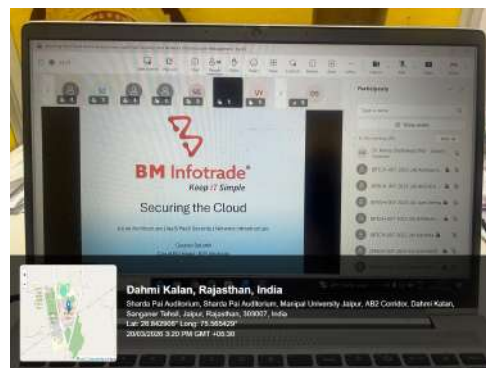
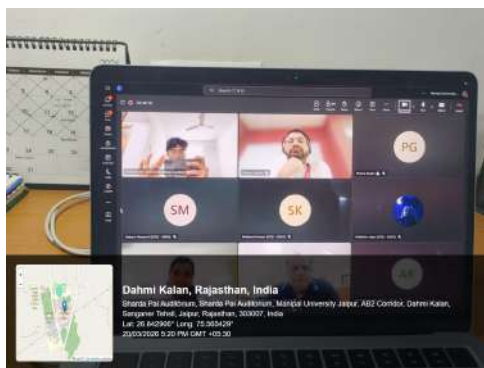
**Organized by:** Department of Computer and Communication Engineering, Manipal University Jaipur

**Convenors:** Dr. Hema Shekhawat, Dr. Arjun Singh, and Dr. Vijay Shankar Sharma

#### Resource Persons:

Mr. Prashant Manuja, Security & Privacy Manager, Nokia

Mr. Gaurav Solanki, Business Unit Leader – Cloud, BM Infotrade



The Department of Computer and Communication Engineering organized a two-day **expert industry lecture series** on **Security Foundations: Cryptography, Cloud Security, and Network Vulnerability**. The sessions provided students with industry insights into **cloud security, Azure architecture, vulnerability management, privacy governance, PDPL, and GDPR**, helping bridge the gap between academic learning and real-world industry practices.

## Industry Expert Lecture on RDBMS and Software Engineering

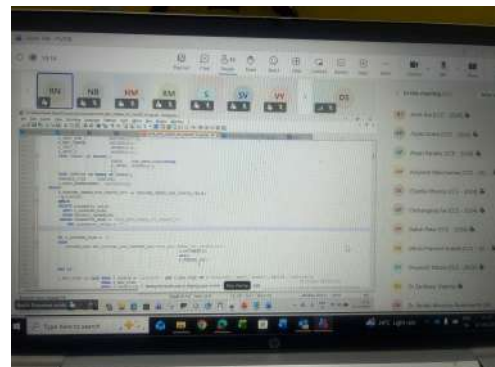
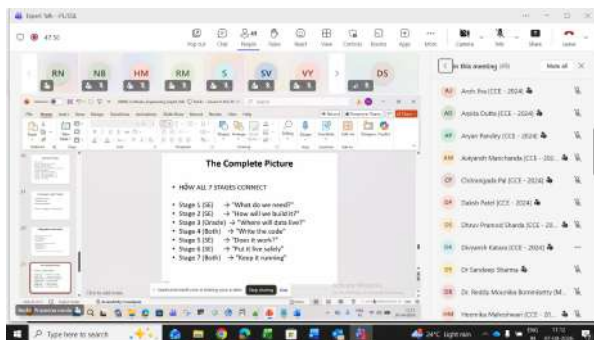
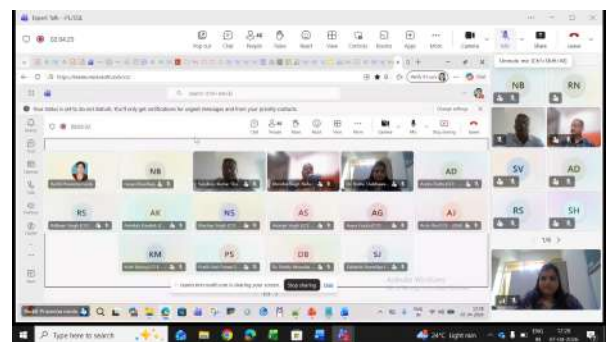
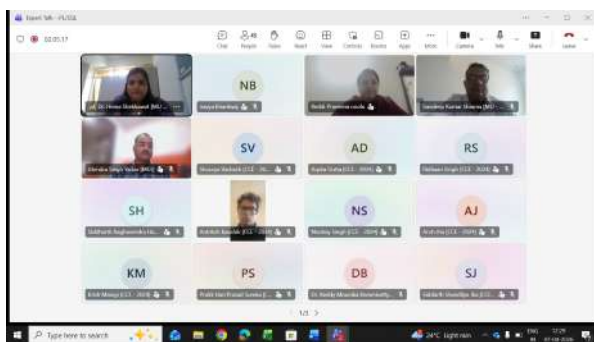
**Date:** 7 April 2026

**Mode:** Online via MS Teams

**Organized by:** Department of Computer and Communication Engineering, Manipal University Jaipur

**Convener:** Dr. Hema Shekhawat, Dr. Sandeep Sharma and Dr. Jitendra S. Yadav

**Resource Person:** Ms. Reddi Praveena Noolu, PL/SQL Developer and Software Engineering Professional



The Department of Computer and Communication Engineering organized an **Industry Expert Lecture on Relational Database Management Systems and Software Engineering**. The session provided students with valuable industry insights into **advanced SQL and PL/SQL concepts, database practices, and the Software Engineering Life Cycle**.

The interactive and hands-on session helped bridge the gap between **academic learning and real-world industry practices**, providing students with practical exposure to database and software development concepts.

## Expert Talk on Relational Database Management Systems and Software Engineering

**Date:** 2 April 2026

**Time:** 10:00 AM–4:30 PM

**Venue:** LHC, R-214, Manipal University Jaipur

**Organized by:** Department of Computer and Communication Engineering, Manipal University Jaipur

**Event Coordinators:** Dr. Jitendra Singh Yadav and Dr. Sandeep Kumar Sharma

**Resource Person:** Mr. Bharat Kumar Awtani, Director, TFour Tech Pvt. Ltd., Jodhpur



The Department of Computer and Communication Engineering organized an **Expert Talk on Relational Database Management Systems and Software Engineering** to enhance students' understanding of database technologies and industry practices.

The session covered **RDBMS fundamentals, database design, normalization techniques, real-world implementation challenges, and industry-oriented tools and technologies**. Through practical examples and interactive discussions, students gained valuable insights into the application of database and software engineering concepts in real-world scenarios.

## Publications

### Prestigious International Research Monograph Publication



**Author:** Mr. Rishit Agnihotri (CCE 2023–27)

**Monograph Title:** *Electrified Road Systems (ERS) for Emerging Asia*

**Publication Series:** Springer Tracts on Transportation and Traffic

**Publisher:** Springer Nature Switzerland AG

**DOI:** <https://doi.org/10.1007/978-3-032-16927-3>

The Department of Computer & Communication Engineering proudly congratulates Mr. Rishit Agnihotri on the prestigious publication of his international research monograph. The book presents a comprehensive scholarly exploration of Electric Road Systems (ERS), including their technology, policy frameworks, grid integration, deployment strategies, and contribution to sustainable electric mobility in Asia. This remarkable achievement reflects the research excellence and academic commitment of an undergraduate researcher.

### SCI Journal Publication

#### Paper Title

An Attention-Guided Multimodal Deep Learning Framework by Integrating CT-PET Imaging and Clinical Data for Lung Cancer Detection

#### Authors

Ritika Dubey, Dr. Arvind Dhaka, Dr. Amita Nandal, Dr. Arpit Kumar Sharma

#### Journal

Scientific Reports (Nature Portfolio)

|                    |                              |
|--------------------|------------------------------|
| Publisher :        | Springer Nature              |
| Indexing :         | SCI Expanded                 |
| Publication Type : | Open Access Research Article |
| Published :        | 29 June 2026                 |
| Year :             | 2026                         |
| DOI :              | 10.1038/s41598-026-58892-2   |

## International Book Publication

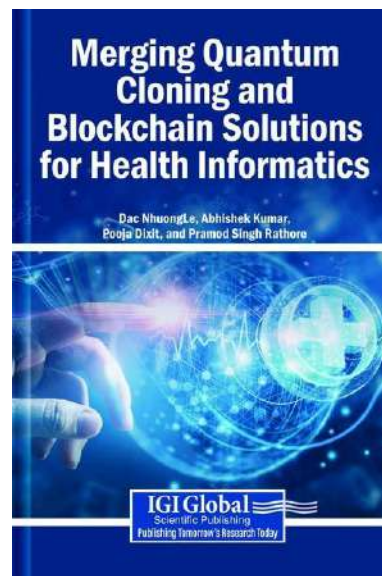
### Book Title

Merging Quantum Cloning and Blockchain Solutions for Health Informatics

ISBN 9798337371894

**Editors** Dac Nhuongle, Abhishek Kumar, Pooja Dixit and **Pramod Singh Rathore**

Publisher : IGI Global Scientific Publishing  
Publication Type : International Academic Book  
Domain : Medicine & Healthcare  
ISBN-13 : 979-8-3373-7189-4  
Year : 2026



*Cover of the International Book Publication*

## International Book Publication

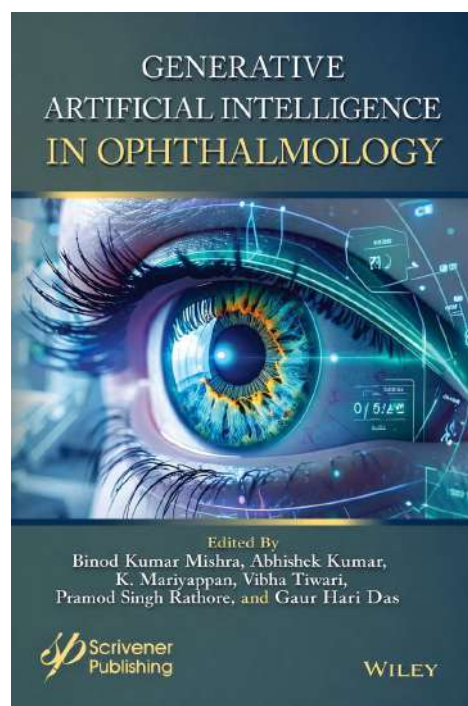
### Book Title

Generative Artificial Intelligence in Ophthalmology

### Editors

Binod Kumar Mishra, Abhishek Kumar, K. Mariyappan, Vibha Tiwari, **Pramod Singh Rathore**, and Gaur Hari Das

Publisher : Scrivener Publishing LLC / Wiley  
Publication Type : International Edited Book  
First Published : 05 June 2026  
Print ISBN : 978-1-394-35817-5  
Online ISBN : 978-1-394-35821-2  
Year : 2026  
DOI : 10.1002/9781394358212



*Cover of the International Book Publication*

## Springer Conference Paper Presentation

### Paper Title

Secure and Lightweight ECC-Based Mutual Authentication and Key-Exchange Protocol for Internet of Vehicles

### Authors

Mr. Chirayu Anchan, Dr. Hema Shekhawat, Dr. Jitendra S. Yadav

### Conference

International Conference on Innovation and Practices in Artificial Intelligence (ICIPAI-2026)

Venue : Quantum University, Roorkee  
Date : 15–16 May 2026  
Achievement : Research Paper Presentation  
Year : 2026



Certificate of Paper Presentation

## IEEE Conference Paper Presentation

### Paper Title

Federated Learning with Dynamic Fluid Antennas for Real-Time Edge AI in Autonomous Vehicles

### Authors

Dr. Amit Chaurasia, Rishit Agnihotri, Bhavya Chauhan

### Conference

3rd IEEE Guwahati Subsection Conference (GCON 2026)

Organizer : IEEE Guwahati Subsection  
Venue : IIT Guwahati  
Date : 03–05 June 2026  
Achievement : Paper Presentation



Certificate of Paper Presentation

## IEEE Conference Publication

### Paper Title

*Adaptive Quantized Planetary Crater Detection System for Autonomous Space Exploration*

### Participant

Aditri Paul

### Conference

The 2nd International Conference on Federated Learning and Intelligent Computing Systems (FLICS 2026)

Venue : Valencia, Spain

Date : 9–12 June 2026

Achievement : Paper Presentation

DOI: <https://ieeexplore.ieee.org/document/11621921>



*Certificate of Attendance*

## Conference Paper Publication

### Paper Title

Deepfake Detection Using Face Swap Techniques

### Authors

Dr. Amit Chaurasia, Isha Kashyap, and Yash Kumar

### Conference Proceedings

IET Conference Proceedings

Publisher : The Institution of Engineering and Technology (IET)

Publication Type : Conference Proceedings

Year : 2026

DOI : 10.1049/icp.2026.2476

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## Springer Conference Paper Publication

### Paper Title

AI-Based Traffic Flow Optimization Using Quantum-Inspired Techniques

### Authors

Lakshya Jhalaria, Dr. Vivek Sharma

### Conference Proceedings

Innovations in Computational Intelligence and Computer Vision (ICICV 2025)

Publisher : Springer Nature  
Book Series : Lecture Notes in Networks and Systems (LNNS)  
Volume : 1786  
Pages : 615–631  
Publication Type : Conference Paper  
Published : 01 April 2026  
DOI : 10.1007/978-3-032-14757-8\_43

## Springer Conference Paper Publication

### Paper Title

CycleGAN-Based Adversarial Learning for Enhanced Steganographic Image Detection

### Authors

Narendra Kumar Chahar, Arvind Dhaka, Amita Nandal, Vijay Kumar

### Conference Proceedings

Innovations in Computational Intelligence and Computer Vision (ICICV 2025)

Publisher : Springer Nature  
Book Series : Lecture Notes in Networks and Systems (LNNS)  
Volume : 1699  
Pages : 603–618  
Publication Type : Conference Paper  
Published : 21 February 2026  
DOI : 10.1007/978-3-032-09825-2\_39

## Indian Patent Application Publication

### Title of the Invention

A Computer Vision-Based Method for Automated Detection of Safety Helmet Usage Using Deep Learning

### Inventors

Namith Fotedar, Arshia Aggarwal, Dr. Hema Shekhawat

### Applicant

Manipal University Jaipur

Application No. : 202611033189 A

Country : India

Filing Date : 19 March 2026

Publication Date : 08 May 2026

Publication : The Patent Office Journal

Journal No. : 19/2026

|                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (12) PATENT APPLICATION PUBLICATION                                                                                             | (21) Application No.202611033189 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| (19) INDIA                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| (22) Date of filing of Application :19/03/2026                                                                                  | (43) Publication Date : 08/05/2026                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| (54) Title of the invention : A computer vision based method for automated detection of safety helmet usage using deep learning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| (51) International classification                                                                                               | (71) Name of Applicant :<br>300B, C00K<br>300B, C00V<br>10/74A<br>G06N 3/04, G06N 3/04<br>G06N 3/04<br>10/77A<br>(31) Priority Document No :<br>(32) Priority Date :<br>(33) Name of priority country :<br>(86) International Application No :<br>(87) International Publication No :<br>(61) Patent of Addition to Application Number :<br>(62) Divisional to Application Number :<br>(57) Abstract:<br>The present invention relates to an automated computer vision-based method for detecting safety helmet usage among two-wheeler riders using deep learning techniques. The method comprises the following: capturing visual image or video from road side cameras; preprocessing the captured data to improve the image quality; applying a trained deep learning model to identify the head region of the rider; using a classification model that determines whether a safety helmet is present or absent based on learned visual features; and generating output indicating helmet compliance or violation for display. Existing traffic enforcement mechanisms rely heavily on manual monitoring of surveillance footage, which is inefficient, time-consuming, error-prone, and unsuitable for large-scale continuous deployment. The present method incorporates systematic image preprocessing, robust object detection, and deep learning-based classification models to accurately analyze visual data under varying environmental conditions such as changes in illumination, occlusion, and camera angle. The invention enables real-time monitoring with minimal human intervention, significantly improves detection accuracy, and ensures consistent enforcement of safety regulations.<br>No. of Pages : 11 No. of Claims : 5 |

The Patent Office Journal No. 19/2026 Dated 08/05/2026 52515

Indian Patent Application Publication

## Indian Patent Application Publication

### Title of the Invention

A Quantum-Resistant Blockchain-Assisted Authentication System for Smart Grids

### Inventor

Dr. Hema Shekhawat

### Applicant

Manipal University Jaipur

Application No. : 202611033182 A

Country : India

Filing Date : 19 March 2026

Publication Date : 08 May 2026

Publication : The Patent Office Journal

Journal No. : 19/2026

No. of Claims : 02

|                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (12) PATENT APPLICATION PUBLICATION                                                                         | (21) Application No.202611033182 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| (19) INDIA                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| (22) Date of filing of Application :19/03/2026                                                              | (43) Publication Date : 08/05/2026                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| (54) Title of the invention : A Quantum-Resistant Blockchain-Assisted Authentication system for Smart Grids |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| (51) International classification                                                                           | (71) Name of Applicant :<br>300B, H04L<br>9/00, H04L<br>9/32, H04L<br>28/06<br>H04W<br>12/06S<br>H04W<br>12/041<br>(31) Priority Document No :<br>(32) Priority Date :<br>(33) Name of priority country :<br>(86) International Application No :<br>(87) International Publication No :<br>(61) Patent of Addition to Application Number :<br>(62) Divisional to Application Number :<br>(57) Abstract:<br>The present invention relates to a lattice-based blockchain-assisted certificateless data authentication and key exchange system that provides quantum resistance, conditional anonymity, dynamic participation, and key management capabilities designed for smart grid metering infrastructure (SGMI). The system comprises: a smart meters (SMs) monitor energy consumption and transmit data to Neighborhood Area Network (NAN) gateways, which act as intermediaries between SMs and the central node; and a central node processes this data for billing, analytics, and grid management. To secure communication, the proposed quantum-resistant authentication scheme ensures that only verified devices can exchange data. Blockchain smart contracts handle identity verification, key exchange, and revocation, preventing unauthorized access. Lattice-based cryptography (Dyble, Dhillon) secures key exchanges, making the system resistant to quantum attacks. The integration of ReactJS (frontend), NodeJS (backend), and Solidity smart contracts ensures seamless interaction between users, meters, and the grid infrastructure. Blockchain technology eliminates single points of failure and mitigates distributed denial-of-service attacks. Through rigorous simulations, our proposed method outperforms existing techniques in energy efficiency, computational cost and data privacy while ensuring robust security measures.<br>No. of Pages : 15 No. of Claims : 2 |

The Patent Office Journal No. 19/2026 Dated 08/05/2026 52507

Indian Patent Application Publication

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## Research and Publication Summary

| Category                             | Count     |
|--------------------------------------|-----------|
| Q1 Journal Publications              | 23        |
| Q2 Journal Publications              | 09        |
| Q3 Journal Publications              | 02        |
| Conference Publications              | 07        |
| Book Series / Conference Proceedings | 05        |
| Book Conference Proceedings          | 03        |
| Patent Granted                       | 04        |
| Patent Published                     | 08        |
| Patent Filed                         | 02        |
| Sanctioned External Projects         | 01        |
| <b>Total Publications</b>            | <b>54</b> |
| <b>Total IPR/Project Funding</b>     | <b>15</b> |

*Research transforms ideas into innovation and innovation into societal impact.*

*— Department of CCE*

## Placement

### Placements and Internships

#### Placement Overview

The Department of Computer and Communication Engineering continued its excellent placement record during the academic session January–June 2026.

Students secured placements and internships in leading multinational companies, product-based organizations, startups, and research institutions through campus recruitment and internship drives.

The department remains committed to enhancing employability through technical training, coding practice, mock interviews, industrial interaction, and skill-development programs.

### Placement Statistics

95%

Placement Rate

44LPA

Highest Package

7.8LPA

Average Package

120+

Students Placed

### Major Recruiters

- |             |             |             |                 |
|-------------|-------------|-------------|-----------------|
| • Amazon    | • Accenture | • Wipro     | • IBM           |
| • Microsoft | • Infosys   | • Capgemini | • Oracle        |
| • Deloitte  | • TCS       | • Cognizant | • Tech Mahindra |

### Placement Highlights

#### Outstanding Achievements

- Students received offers from leading multinational companies.
- Multiple students secured PPOs through internships.
- Excellent participation in placement drives.
- Strong performance in coding and technical interviews.
- Continued growth in internship opportunities.

## Recruiter Gallery









*Success is where preparation meets opportunity. Our students continue to excel in academia and industry.*

*— Training and Placement Cell*

## Capturing the memorable moments, Achievements & testimonials of the Even Semester (January–June 2026)

3/10/26, 10:20 AM

Print : Udyam Registration Certificate

UDYAM REGISTRATION CERTIFICATE

UDYAM REGISTRATION NUMBER

UDYAM-TS-02-0322870

NAME OF ENTERPRISE

KREATIF ATELIER

TYPE OF ENTERPRISE \*

| S.No. | Classification Year | Enterprise Type | Classification Date |
|-------|---------------------|-----------------|---------------------|
| 1     | 2025-26             | Micro           | 10/03/2026          |

MAJOR ACTIVITY

SERVICES

SOCIAL CATEGORY OF ENTREPRENEUR

GENERAL

NAME OF UNIT(S)

| S.No. | Name of Unit(s) |
|-------|-----------------|
| 1     | Kreatif Atelier |

OFFICIAL ADDRESS OF ENTERPRISE

|                     |                |                           |                        |
|---------------------|----------------|---------------------------|------------------------|
| Flat/Door/Block No. | 301            | Name of Premises/Building | GKs TOPAZ              |
| Village/Town        | DEFENCE COLONY | Block                     | NEAR 5TH Avenue Bakery |
| Road/Street Lane    | SAINIKPURI     | City                      | SECUNDERABAD           |
| State               | TELANGANA      | District                  | HYDERABAD, Pin 500094  |
| Mobile              | 9440921782     | Email:                    | gaurishgiri@gmail.com  |

DATE OF INCORPORATION / REGISTRATION OF ENTERPRISE

03/03/2026

DATE OF COMMENCEMENT OF PRODUCTION/BUSINESS

NATIONAL INDUSTRY CLASSIFICATION CODE(S)

| S.No. | NIC 2 Digit | NIC 4 Digit                                                    | NIC 5 Digit                                                               | Activity |
|-------|-------------|----------------------------------------------------------------|---------------------------------------------------------------------------|----------|
| 1     | 62          | 629 - Computer programming, consultancy and related activities | 6299 - Other information technology and computer service activities n.e.c | Services |

DATE OF UDYAM REGISTRATION

10/03/2026

\* In case of graduation (upward/reversal) of status of an enterprise, the benefit of the Government Schemes will be available as per the provisions of Notification No. S.O. 2119(E) dated 26.06.2020 issued by the Mo/MSME.

Disclaimer: This is computer generated statement, no signature required. Printed from <https://udyamregistration.gov.in> & Date of printing:- 10/03/2026

For any assistance, you may contact:

1. District Industries Centre: HYDERABAD (TELANGANA)

[https://udyamregistration.gov.in/udyam\\_user/udyam\\_PrintRegistration.aspx](https://udyamregistration.gov.in/udyam_user/udyam_PrintRegistration.aspx)

3/10/26, 10:20 AM

Print : Udyam Registration Certificate

UDYAM REGISTRATION CERTIFICATE

UDYAM REGISTRATION NUMBER

UDYAM-WB-10-0209424

NAME OF ENTERPRISE

HOUSE OF MOMIN

TYPE OF ENTERPRISE \*

| S.No. | Classification Year | Enterprise Type | Classification Date |
|-------|---------------------|-----------------|---------------------|
| 1     | 2026-27             | Micro           | 08/06/2026          |

MAJOR ACTIVITY

TRADING  
(For availing benefits of Priority Sector Lending(PSL) ONLY)

SOCIAL CATEGORY OF ENTREPRENEUR

GENERAL

NAME OF UNIT(S)

| S.No. | Name of Unit(s) |
|-------|-----------------|
| 1     | HOUSE OF MOMIN  |

OFFICIAL ADDRESS OF ENTERPRISE

|                     |                           |                           |                        |
|---------------------|---------------------------|---------------------------|------------------------|
| Flat/Door/Block No. | -                         | Name of Premises/Building | 1B/134                 |
| Village/Town        | KOLKATA                   | Block                     | -                      |
| Road/Street Lane    | 106 N/A CHATTERJEE SARANI | City                      | KOLKATA                |
| State               | WEST BENGAL               | District                  | KOLKATA, Pin 700009    |
| Mobile              | 7803851294                | Email:                    | thchatterjee@gmail.com |

DATE OF INCORPORATION / REGISTRATION OF ENTERPRISE

02/04/2026

DATE OF COMMENCEMENT OF PRODUCTION/BUSINESS

02/04/2026

NATIONAL INDUSTRY CLASSIFICATION CODE(S)

| S.No. | NIC 2 Digit | NIC 4 Digit                                                  | NIC 5 Digit                                                                                                                                        | Activity |
|-------|-------------|--------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 1     | 47          | 471 - Retail trade, except of motor vehicles and motorcycles | 4711 - Retail sale of ready-made garments, footwear, goods, other articles of clothing and clothing accessories such as gloves, ties, hosiery etc. | Trading  |

DATE OF UDYAM REGISTRATION

08/06/2026

\* In case of graduation (upward/reversal) of status of an enterprise, the benefit of the Government Schemes will be available as per the provisions of Notification No. S.O. 2119(E) dated 26.06.2020 issued by the Mo/MSME.

Disclaimer: This is computer generated statement, no signature required. Printed from <https://udyamregistration.gov.in> & Date of printing:- 08/06/2026

For any assistance, you may contact:

Our Students Gaurish Giri Pillai and Md. Mobasshir Udyam registration certificates of student-led startups.


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



This certificate is awarded to

**SUVSANKET NAYAK**

for successfully completing the course

**Design and Analysis of Algorithms**

with a consolidated score of **55** %

|                    |       |                |          |
|--------------------|-------|----------------|----------|
| Online Assignments | 23/25 | Proctored Exam | 31.88/75 |
|--------------------|-------|----------------|----------|

Total number of candidates certified in this course: 1933



Prof. Andrew Thangaraj  
Chair  
Centre for Distance and Digital Education, IITM

Jan-Mar 2026  
(8 week course)



Prof. Vinodh Muthurajyan  
NPTEL Coordinator  
IIT Madras



Indian Institute of Technology Madras



Roll No: NPTEL26CS675457702471 To verify the certificate



No. of credits recommended: 3



MANIPAL UNIVERSITY JAIPUR

SCHOOL OF COMPUTER SCIENCE & ENGINEERING

**AWARD OF EXCELLENCE**

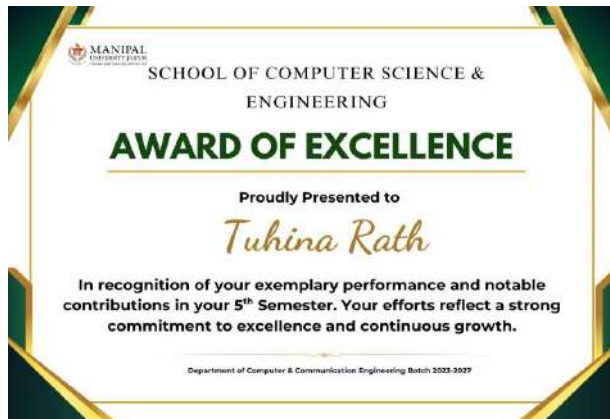
Proudly Presented to

*Krishna Goel*

In recognition of your exemplary performance and notable contributions in your 5<sup>th</sup> Semester. Your efforts reflect a strong commitment to excellence and continuous growth.

Department of Computer & Communication Engineering Batch 2025-2027

NPTEL certificate of our Student **Suvsanket Nayak**





MANIPAL UNIVERSITY  
JAIPUR

**SCHOOL OF COMPUTER SCIENCE & ENGINEERING**

Department  
of  
**Computer & Communication Engineering**

*testimonial*



“I am currently pursuing my B.Tech in Computer and Communication Engineering (2023–2027) at Manipal University Jaipur. My journey so far has been a balanced blend of academic learning, skill development, and personal growth. The CCE department has given me strong exposure to both computer science and communication systems, with supportive faculty who...

**Bhavya Chauhan**  
2023–27

MANIPAL UNIVERSITY  
JAIPUR

**SCHOOL OF COMPUTER SCIENCE & ENGINEERING**

Department  
of  
**Computer & Communication Engineering**

*testimonial*



“I am proud to have pursued my B.Tech in the Computer and Communication Engineering (CCE) department, where a strong academic foundation and hands-on learning greatly shaped my growth. Through projects, labs, and faculty guidance, this journey has prepared me to confidently step into the professional world and contribute to the field of engineering.

**Neil Pathak**  
2023–27

MANIPAL UNIVERSITY  
JAIPUR

**SCHOOL OF COMPUTER SCIENCE & ENGINEERING**

Department  
of  
**Computer & Communication Engineering**

*testimonial*



“My experience as a B.Tech student in the Computer and Communication Engineering (CCE) department has been both enriching and transformative. The curriculum, combined with practical exposure and supportive faculty, helped me strengthen my technical knowledge and essential professional skills. ..

**Sanskriti Srivastava**  
2023–27

MANIPAL UNIVERSITY  
JAIPUR

**SCHOOL OF COMPUTER SCIENCE & ENGINEERING**

Department  
of  
**Computer & Communication Engineering**

*testimonial*



“Being a Computer and Communication Engineering student at Manipal University, Jaipur has been a truly transformative experience for me. The university offers a strong balance of theoretical knowledge and practical exposure essential for today's tech-driven world. Its modern infrastructure, well-equipped labs, smart classrooms, and high-speed connectivity create an excellent learning environment.

**Rudransh**  
2023–27

MANIPAL UNIVERSITY  
JAIPUR

**SCHOOL OF COMPUTER SCIENCE & ENGINEERING**

Department  
of  
**Computer & Communication Engineering**

*testimonial*



“Studying in the Computer and Communication Engineering department has been a rewarding journey that has shaped both my knowledge and confidence. The blend of strong academics, practical exposure. This experience has equipped me with the skills and mindset needed to pursue opportunities in the engineering field with confidence...

**Arshita Sinha**  
2023–27

MANIPAL UNIVERSITY  
JAIPUR

**SCHOOL OF COMPUTER SCIENCE & ENGINEERING**

Department  
of  
**Computer & Communication Engineering**

*testimonial*



“My time in the Computer and Communication Engineering (CCE) department has been instrumental in my overall development as an engineering student. The rigorous coursework, practical learning opportunities, and encouraging environment helped me build strong technical fundamentals and essential professional skills. This journey has prepared me to face future challenges with confidence and determination...

**Veer Jain**  
2023–27

MANIPAL UNIVERSITY  
JAIPUR

**SCHOOL OF COMPUTER SCIENCE & ENGINEERING**

Department  
of  
**Computer & Communication Engineering**

*Testimonial*



“Being a student of B.Tech CCE at Manipal University Jaipur has been a turning point for me, not just academically, but personally. I joined at a time when I was struggling with consistency and discipline, and over time, this environment pushed me to rebuild those foundations. What I appreciate most about the CCE department is how it encourages you to think and...”

**Hrishiraj Dev Sarmah**  
2023-24

MANIPAL UNIVERSITY  
JAIPUR

**SCHOOL OF COMPUTER SCIENCE & ENGINEERING**

Department  
of  
**Computer & Communication Engineering**

*Testimonial*



“College turned out to be a lot more than just classes for me. Somewhere along the way, especially being around people in the CCE department at Manipal University Jaipur, it became more about exposure than anything else. You're constantly around different kinds of people, different mindsets, and that naturally changes how you see things. It's not always obvious....”

**Dev Narayan CS**  
2023-24

### Memories of the Semester

The Even Semester (January–June 2026) was filled with learning, innovation, collaboration, research, technical events, expert lectures, workshops, placements, and student achievements.

The Department of Computer and Communication Engineering remains committed to providing an enriching academic environment that inspires students to excel in education, research, innovation, and professional development.

**Thank You**

**Department of Computer and Communication Engineering**  
**Manipal University Jaipur**