



MAHARAJA UNIVERSITY
JAIPUR

A Biannual Magazine of Computer and Communication Engineering

CCE PULSE

July-Dec 2024



About CCE Department

Department of Computer & Communication Engineering Manipal University Jaipur marked its commencement in 2015. The goal of the department is to integrate computers and communication, which includes concepts and practices of software and hardware of computers, information networks, wireless communication systems, etc. The department has been NBA-accredited for the years 2023-26. The Department of CCE offers one of the most comprehensive instructional programs enhanced with research in its emerging fields. Research at the department addresses issues across the spectrum of Computer as well as Communication engineering systems. Some of the key areas include Machine Learning, the Internet of Things (IoT), Web Technologies, Advance Computer Networking, Network and Information Security, Wireless Communication, Network on Chip (NoC), Software Testing, Computer Architecture, and Embedded Systems.

The teaching at the department is facilitated with a dedicated number of core subject labs aided by industry standard commercial hardware and software platforms like Nvidia, Param Shavak Supercomputer, Oracle, EMC2, Microsoft Office 365 cloud, .Net, Azure etc. There are special project labs for IoT and data analytics.

The department is focused on providing a realistic approach of learning to develop a dynamic student team that is efficient in meeting the ever-changing technological and social challenges.

Contents

- Workshops
- Outreach activities
- Expert Lectures
- Awards and achievements
- Publications



From The Magazine Team

Welcome to the Jan-June 2024 edition of our departmental magazine. In this edition, we try to bind together each aspect of our CCE family, and we hope it inspires every member to actively contribute to the development of the department academically and in extra-curricular activities. It represents the creative side of our students to a fair degree—something that we think we all need to reconnect with, amidst the busy schedule of semester exams, surprise quizzes, and all those assignments that make you want to bang your head on the wall. This magazine provides a platform for students and staff to share information, spread the latest technical knowledge, and cultivate the right ways that will equip all of us to stay competent in our respective fields of study, and activities.

We thank all of you who stood by us patiently and contributed to the development of our magazine when there were days when the only thing, we had to offer was our confusion.

From The HoD Desk

Dear Students, Faculty, and Readers,

It gives me immense pleasure to present the July-Dec 2024 newsletter “CCEPulse” of the Department of Computer and Communication Engineering. This newsletter highlights the remarkable achievements, events, and activities that have taken place over the past six months. From expert lectures and workshops to student projects and faculty contributions, these accomplishments reflect our collective commitment to academic excellence and innovation.

Chief Editors

Prof (Dr) Vijay Pal Singh Dhaka
Prof (Dr) Sunil Kumar

Associate Editors

Dr Sandeep Kumar Sharma
Mrs Hema Shekhawat

Students Editors

Kanha Gupta
Riddhi Garg

Vision and Mission of the Department

VISION

- Inculcate academic excellence and research aptitude for social development.

MISSION

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

Key Features

- The department has well-equipped laboratories
- All the classrooms are facilitated with state-of-the-art teaching modes
- Tie up with industries involved in research and development to give live experience to the students
- Periodic assessment and modification of the course curriculum in line with the industry requirements
- Periodic updation of the In-house Laboratories as per current industry/research requirements
- R & D activity of the staff has resulted in several publications in peer-reviewed International Journals of High Impact Factor and International/ National conferences.

30
Industry
Collaborations


95%
Campus
Placement

75%
Faculty
Members
Holding PhD

10
Crore
Scholarships

46
Incubation
Startups





Dahmi Kalan, Rajasthan, India
 Unnamed Road, Dahmi Kalan, Rajasthan 303007, India
 Lat 26.842369°
 Long 75.564836°
 17/07/24 03:09 PM GMT +05:30



Value-Added Course

System Administration Using Linux

 <p>MANIPAL UNIVERSITY JAIPUR <i>(University under Section 2(f) of the UGC Act)</i></p>	<h1>Certificate</h1> <h2>Value Added Course</h2> <h3>On</h3> <h2>SYSTEM ADMINISTRATION USING LINUX</h2> <h3>(30 hours course)</h3>	<p>No.: CC/2024/VAC/SAUL/039</p>
<p>This is to certify that Rahul Shekhawat Reg No '229303372 student of BTech-CCE Semester V has successfully completed a Value-Added Course on “System Administration Using Linux” with “A+” Grade. This course was offered by the Department of Computer and Communication Engineering, Manipal University Jaipur during July-Aug 2024.</p>		
 Dr Sandeep Kumar Sharma Course Coordinator	 Dr Sunil Kumar Head, Department of CCE	 Dr Vijay Pal Singh Dhaka Director, School of CIS



**MANIPAL UNIVERSITY
JAIPUR**
(University under Section 2(f) of the UGC Act)

Value Added Course
On
System Administration
using Linux



About the course

System Administration is designed for IT professionals without previous Linux system administration experience. The course provides students with Linux administration competence by focusing on core administration tasks. This course also provides a foundation for students who plan to become full-time Linux system administrators by introducing key command-line concepts and enterprise-level tools.

Outline of the course

- Get started with Enterprise Linux
 - Describe and define open source, Linux, Linux distributions, and Red Hat Enterprise Linux
 - Access the command line
 - Log into a Linux system and run simple commands using the shell.
 - Manage files from the command line.
 - Copy, move, create, delete, and organize files while working from the bash shell.
 - Get help in Red Hat Enterprise Linux systems.
 - Resolve problems by using local help systems.
 - Create, view, and edit text files.
 - Manage text files from command output or in a text editor.
 - Manage local users and groups.
 - Create, manage, and delete local users and groups, as well as administer local password policies.
 - Control access to files
 - Set Linux file system permissions on files and interpret the security effects of different permission settings.
 - Monitor and manage Linux processes.
 - Evaluate and control processes running on a Red Hat Enterprise Linux system.
 - Control services and daemons
 - Control and monitor network services and system daemons with the system service.
 - Configure and secure SSH.
 - Configure secure command line service on remote systems, using OpenSSH.
 - Analyze and store logs.
 - Locate and accurately interpret logs of system events for troubleshooting purposes.
 - Manage networking.
 - Configure network interfaces and settings on Red Hat Enterprise Linux servers.

Course Outcome

- * Access Linux file systems
 - Access, inspect, and use existing file systems on storage attached to a Linux server.
- * Analyze servers and get support.
 - Investigate and resolve issues in the web-based management interface, getting support from Red Hat to help solve problems.
- * Comprehensive review
 - Review the content covered in this course by completing hands-on exercises.

Course Fee

Free of cost

Duration of the course

The course will be conducted for a total of 30 (h.)

Intake

Selection is purely based on a first come first serve basis, with an intake of 100 participants.

Course Timeline

Registration: 24-06-2024 to 05-07-2024
 Course Duration: 08-07-2024 to 31-07-2024 (30 hrs)
 Exam Date: 01-08-2024 (Online)
 Reg. Link: <https://forms.office.com/r/1KWFDJBBhw>

Resource Persons

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Organized By

School of Computing and
Communication Engineering



One-day Symposium

Cryptography and Cyber Security

The 1-day symposium on "Cryptography and Cyber Security" was held on 19th September. The event was organized by the Panacea club of the Department of Computer and Communication Engineering, Manipal University Jaipur. The symposium aimed to highlight the importance of safeguarding digital infrastructures in an increasingly connected world, with special emphasis on integrating sustainable development goals into cybersecurity strategies. The expert of the event was Mr. Manish Kumawat, Manager - Cyber Testing & Response at RSM US LLP Gurugram, Haryana. He discussed and demonstrated various applications to secure private data and how to bypass the login credentials. 178 students from different have been attended the symposium and educated about fundamentals of cybersecurity, current threats, best practices for data protection, and strategies to secure digital infrastructure and devices.



5-Day Faculty Development Program

Curriculum Development Aligned with NEP 2020

The Department of Computer and Communication Engineering, Manipal University Jaipur, in association with MUJ-TEC & IQAC and in collaboration with NITTTR Chandigarh, organised the Faculty Development Program (FDP) on Curriculum Development Aligned with NEP 2020 from 1st July to 5th July 2024. Eminent professors and industry experts graced the FDP. The FDP was attended to, and 55 faculties from different departments of MUJ successfully obtained certificates. Dr Meenakshi Sood, NITTTR Chandigarh, Dr P S Grover, Delhi University, Dr. Sanjeev Sofat, Professor, PEC Chandigarh, Prof. B S Pabla, Professor (Retd.), NITTTR Chandigarh, Ms. Anuradha Chawla, Director, BBetter Solution Chandigarh, Dr. Jyotirmoy Dutta, Specialist Scientist, India Urban Data Exchange Program Unit, IISc. Bangalore, Dr. J. Preetha, Dean, Kongunadu College of Engineering and Technology, Trichy Tamil Nadu were the esteemed speakers of the FDP.





5-Day Faculty Development Program

Employability Skills for Industry 4.0

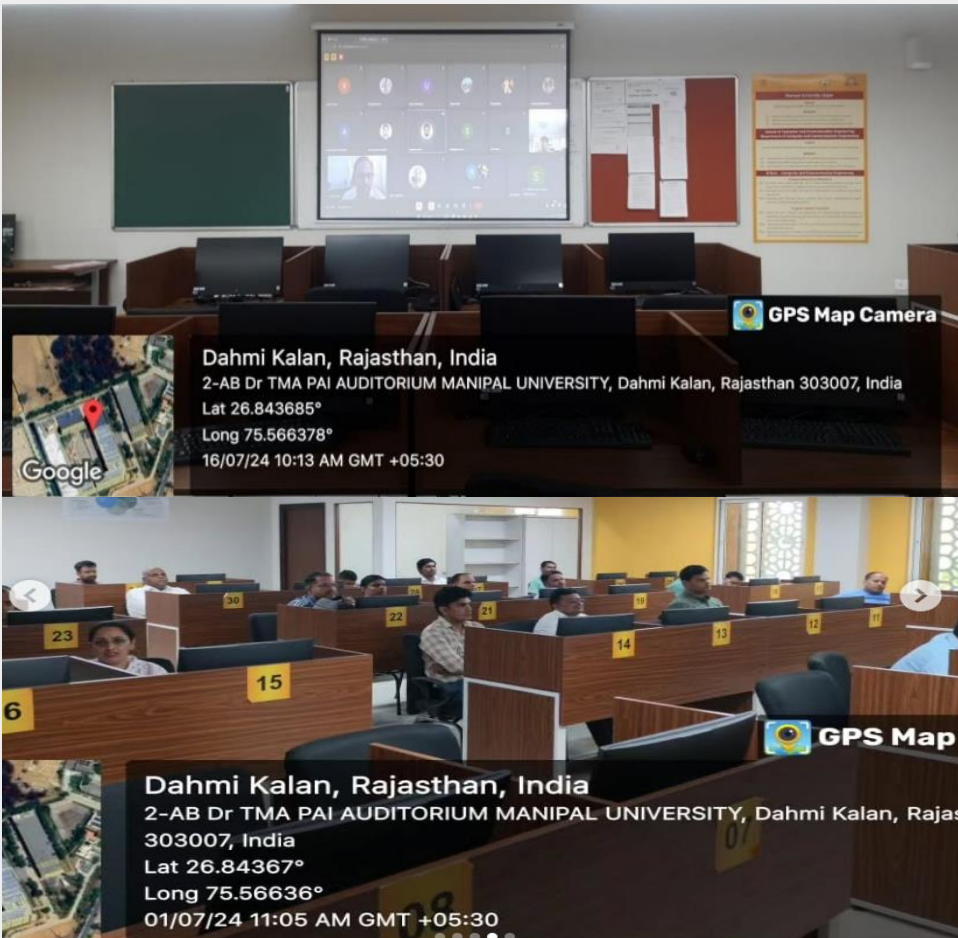
Manipal University Jaipur, in collaboration with the National Institute of Technical Teachers Training and Research (NITTTR) Chandigarh, has hosted a Faculty Development Program (FDP) focusing on "Employability Skills for Industry 4.0 " from July 27 to August 02, 2024. The FDP has provided a platform for the faculty members to explore strategies that bolster self-esteem and motivation among educators, ultimately leading to improved teaching practices and student outcomes. By fostering a culture of professionalism. Industry 4.0, also known as the Fourth Industrial Revolution, represents a convergence of technologies such as the Internet of Things, Big Data, data analytics, Robotics & Automation, AR, VR, XR, Artificial Intelligence, and Process Digitization. The FDP was under NITTTR Chandigarh training program. The experts was from NITTTR only and Manipal University Jaipur was the nodal center for the event.



5-Day Faculty Development Program

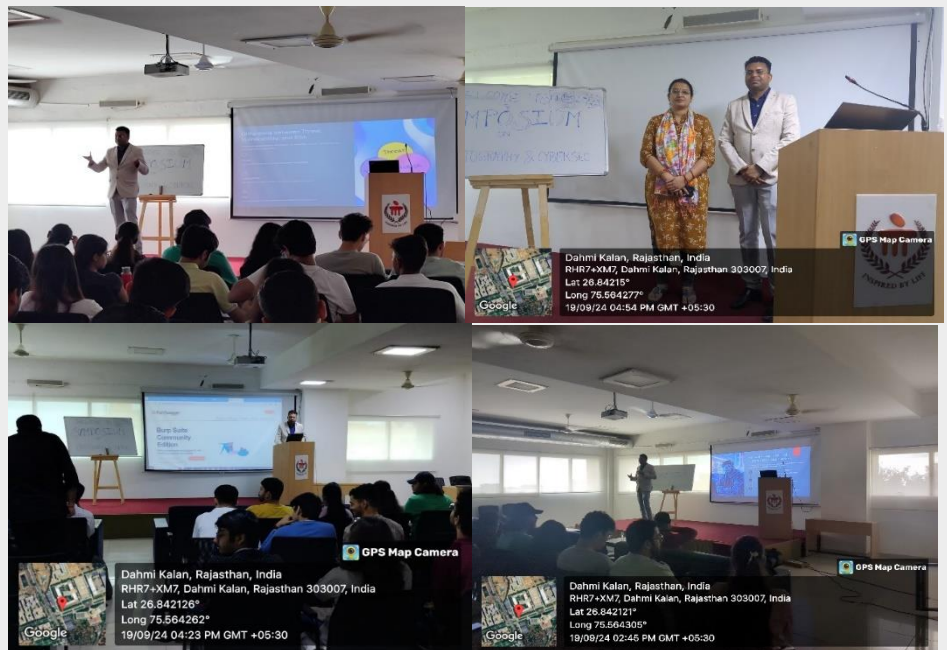
Teacher’s Self Esteem, Motivation & Professionalism Development

Department of CCE, Manipal University Jaipur, in collaboration with the National Institute of Technical Teachers Training and Research (NITTTR) Chandigarh has hosted a Faculty Development Program (FDP) focusing on "Teacher’s Self Esteem, Motivation & Professionalism Development" from July 15 to 19, 2024. The FDP has provided a platform for the faculty members to explore strategies that bolster self-esteem and motivation among educators, ultimately leading to improved teaching practices and student outcomes. By fostering a culture of professionalism. The FDP represents a significant step towards building a more motivated and professionally adept teaching community. The FDP aims to enhance teachers' selfesteem and motivation, which are crucial for professional development and teaching effectiveness. Participants will engage in various technical sessions designed to build self-confidence and improve teaching competence.





The Department of Computer and Communication Engineering (CCE) organized an enlightening expert lecture on **"Cryptography and Cybersecurity"** on **19th September 2024**. This event was exclusively curated for the B.Tech CCE V Semester students to enhance their understanding of the ever-evolving domain of cybersecurity. The session was led by a distinguished expert Mr. Manish Kumawat, Manager - Cyber Testing & Response at RSM US LLP Gurugram, Haryana., who provided valuable insights into the latest trends, challenges, and solutions in cybersecurity. The lecture covered key aspects such as threat analysis, data protection, and ethical hacking.



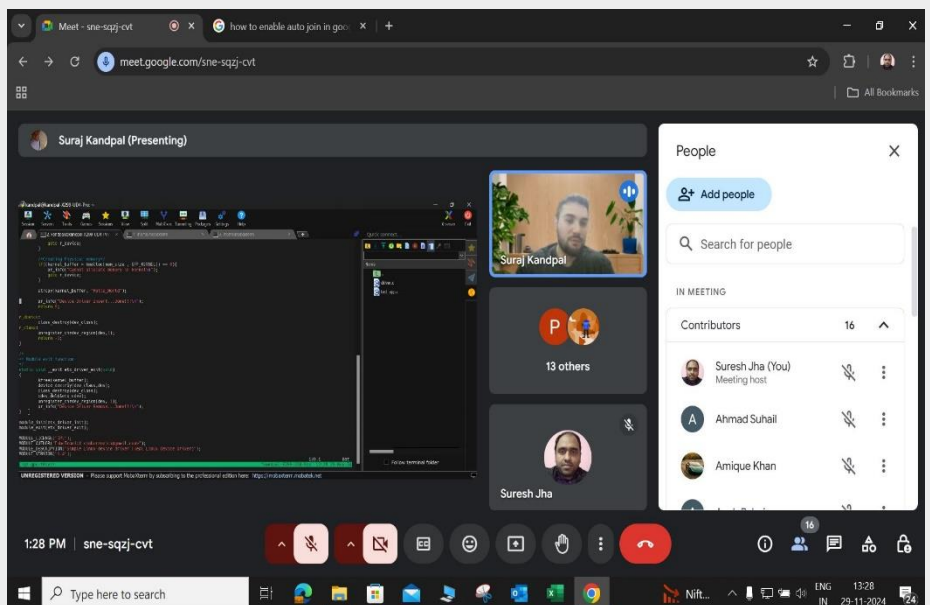
The Department of Computer and Communication Engineering (CCE) successfully organized an expert lecture on **"Network Security"** for the B.Tech CCE VII Semester students. The event took place on 30th September and 1st October 2024 and was a resounding success. The lecture was delivered by Mr. Yogesh Rao, the esteemed CEO of Amigo Cyber, Jaipur. A renowned expert in the field of cybersecurity, Mr. Rao shared his invaluable insights and expertise, addressing various critical aspects of network security.



The Department of Computer and Communication Engineering (CCE) organized a series of expert lectures on **"Software Engineering"** for the B.Tech CCE V Semester students. The sessions took place on **September 16, September 18, and September 19, 2024**. Mr. Hritik Kumar Chaturvedi, a distinguished professional from Celebal Technology, Jaipur, addressed the session. With his vast expertise and real-world experience in software development, Mr. Chaturvedi shared valuable insights into the principles, practices, and emerging trends in software engineering.



The Department of CCE organized an expert lecture on **"Computer Architecture (Device Driver Development)"** for B.Tech CCE V Semester students on **29th November 2024**. The session provided an in-depth understanding of key concepts, including an **Introduction to Micro-operations and RTL Specification**, as well as **Program Control and Input-Output Operations**. The expert speaker shared valuable insights into the principles and practical applications of these topics, equipping students with knowledge essential for device driver development and system-level programming.





The Department of Computer and Communication Engineering organized an outreach activity titled "Innovation and Tech Expo" at Mahatma Gandhi Senior Secondary School, Begas, Jaipur on 20th September 2024. The event aimed to inspire school students by showcasing cutting-edge technologies and innovative projects developed by the BTech-CCE students. Interactive demonstrations, engaging exhibits, and hands-on activities provided school students with a glimpse into the world of technological advancements. The CCE students showed the working of smart devices and robotics to sustainable solutions and AI-driven applications.



The Department of Computer and Communication Engineering organized an Outreach Activity at Government Senior Secondary School, Fatehpura, Jaipur, on 27th September 2024, focusing on the topic "Awareness Program on Digital India and Cyber Safety". The primary objective of the event was to enhance students' understanding of Digital India initiatives, including e-governance, digital literacy, and access to technology, while also highlighting the benefits of government platforms such as DigiLocker, Umang App, and online education portals.



As part of its social outreach initiatives, the Department of Computer and Communication Engineering organized a heartwarming visit to Atmanirbhar Vridhashram - Asha Deep Sansthan, located in Mansarovar, Jaipur, on 8th November 2024. Themed "Bridging Generations: A Day of Joy and Togetherness", the event aimed to foster compassion and community spirit among students and faculty.

The participants engaged the elderly residents in various fun-filled activities, bringing smiles and creating cherished memories. The CCE team also contributed by donating essential items, including clothes and food, to support the residents' needs. The event was a profound experience, promoting empathy, respect for elders, and the values of shared humanity, while also strengthening the bond between generations.





We are proud to announce that **Abhinav Bhatia**, a student of the CCE department, won **First Prize** in the prestigious **Snooker Tournament** held at **BITS Pilani** from **18th to 22nd September 2024**. Competing against skilled participants from across the country, Abhinav displayed exceptional precision, strategic gameplay, and sportsmanship to secure this remarkable victory.



We are proud to announce that **Rishit Agnihotri**, a student of the Department of Computer and Communication Engineering, secured the **Second Prize** at **EVEACK 1.0**, a prestigious national-level hackathon held from **18th to 20th November 2024**. Rishit demonstrated exceptional problem-solving skills and innovative thinking, earning accolades for his outstanding performance. His innovative approach and technical prowess stood out in the competitive arena, showcasing his ability to



We are proud to announce that **Shaurya Sharma**, a student of the Department of Computer and Communication Engineering, was awarded **High Commendation** at the prestigious **India Summit 2024**, held at **MNIT Jaipur** from **8th to 10th November 2024**. This recognition highlights Shaurya's exceptional communication skills, analytical thinking, and ability to address critical topics with clarity and precision.



We are proud to announce that **Veer Jain**, a student from CCE department, has qualified for the **National Finals of the National Coding League** organized by **Scaler School of Technology** on **15th July 2024**. This prestigious competition brings together some of the brightest coding enthusiasts from across the country, and Veer's outstanding performance has earned him a place among the finalists.





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Congratulates

SURAJ KUMAR
B.TECH - CCE (BATCH 2021- 2025)

on getting selected at

amazon

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COMMUNICATION ENGINEERING

Congratulates

PRAJEETA PAL
B.T ECH - CCE (BATCH 2021- 2025)

on getting selected at

accenture

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COMMUNICATION ENGINEERING

Congratulates

VIVEK BHAMBOO
B.TECH - CCE (BATCH 2021- 2025)

on getting selected at

tcs TATA CONSULTANCY SERVICES

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DEPARTMENT OF COMPUTER
AND
COMMUNICATION ENGINEERING

Congratulates

ARYAN SONI
B.T ECH - CCE (BATCH 2021- 2025)

on getting selected at

tcs TATA CONSULTANCY SERVICES

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Congratulates

ONKAR DEOKATE
B.TECH - CCE (BATCH 2021- 2025)

on getting selected at

nissan digital

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AND
COMMUNICATION ENGINEERING

Congratulates

MEHAR SHARMA
B.T ECH - CCE (BATCH 2021- 2025)

on getting selected at

ZS

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DEPARTMENT OF COMPUTER
AND
COMMUNICATION ENGINEERING

Congratulates

DHRUV S PATHAK
B.TECH - CCE (BATCH 2021- 2025)

on getting internship at **Checkmarx**

MANIPAL UNIVERSITY
JAIPUR

AICTE
2018 SCORE



Rishit Agnihotri, BTech CCE, 3rd Semester student, successfully published an Indian patent titled "Continuous Wireless Charging System for Electric Vehicles While Driving" in November 2024. This innovative patent addresses a critical challenge in electric vehicle technology by proposing a system that enables uninterrupted wireless charging while vehicles are in motion, thereby enhancing efficiency and sustainability.

Rohan Thorat, Pratyush Nag, Aryan, and Tanya Mishra, students of B.Tech CCE 5th Semester, who have successfully published their research paper "Emotion Recognizer for Speech Using Deep Learning Techniques" in a Scopus-indexed proceeding in December 2024. The research focuses on leveraging advanced deep learning algorithms to develop a system capable of recognizing emotions from speech signals.

Sanidhya Agarwal, a student of BTech CCE, 5th Semester, has achieved a remarkable milestone by publishing a research paper titled "Battle of Machine Learning Titans for Diabetes in Females" in a Scopus-indexed proceeding in December 2024. The research explores advanced machine learning techniques to improve the prediction and diagnosis of diabetes among females, providing valuable insights into the comparative performance of different models.

Rohit Sharma, a student of the Department of CCE has published a research paper titled "TSAR Images Change Detection Using Proposed Lamina Attention-Based Noise-Resistant UNet Advanced Network (LANRUNet++)" in a prestigious Scopus-indexed journal in December 2024. This groundbreaking research presents an innovative approach to change detection in TSAR images by leveraging the LANRUNet++ model.

Yogender Kumar Sharma, a research scholar from the Department of CCE, published a research paper titled "Uneven Clustering in Wireless Sensor Networks: A Comprehensive Review" in the prestigious Scopus indexed journal, *Computers and Electrical Engineering*, in December 2024. The paper offers an extensive review of uneven clustering techniques in wireless sensor networks.

Ritwiz Aryan, a student of the Department of Computer and Communication Engineering, for publishing a patent titled "A Blockchain-Assisted Quantum-Secure Mutual Authentication and Data Sharing Scheme for the Smart-Grid Ecosystem" in June 2024. This innovative work addresses critical security challenges in smart-grid systems by leveraging blockchain technology and quantum-resistant algorithms to enhance authentication processes and secure data sharing.