IEEE DAY 2025

# JSPM's

# Rajarshi Shahu College of Engineering -

(An Autonomous Institute affiliated to SPPU, Pune)

Department of Electronics and Telecommunication Engineering

**Event Details:**

| | |
|---|---|
| • Event Name | **"5G Communication and Emerging Technologies"** |
| • Speaker | Prof.prashant Joshi |
| • Date | 10th October 2025 |
| • Venue | E&TC Seminar Hall,-A309, JSPM's RSCOE |
| • Time | 10:00 am |
| • Number of Participants | 76 |
| • Student Branch Counselor | Dr. Swati Kale |
| • Student chair | Harshada Raut |

## *1. Introduction*

As part of the **IEEE Day 2025** celebrations, the **IEEE Student Branch (RSCOE)** in collaboration with the **IEEE Communication Society (ComSoc)** organized an expert talk on *"5G Communication and Emerging Technologies"*. The event was conducted with the aim of introducing students to the revolutionary advancements in modern communication systems and the vast potential of **5G and beyond technologies** in shaping the future of global connectivity.

The session was delivered by **Mr. Prashant Joshi**, a distinguished technologist, entrepreneur, researcher, and educationist. The event was attended by **75 students** from the **Third Year B.Tech – Electronics and Telecommunication Engineering Department**.

This knowledge-sharing session provided valuable insights into next-generation communication systems, highlighting opportunities for young engineers in 5G, IoT, and AI-integrated networks.

## *2. About the Speaker*

Mr. Prashant Joshi is the Founder of Leap and Scales Group, a technology-driven enterprise focusing on innovation, digital transformation, and industrial automation. He is a dynamic professional with diverse experience as an entrepreneur, researcher, technologist, and educationist.

He currently serves as the Chair of the IEEE Technology and Engineering Management Society (TEMS) and IEEE Systems Council, Pune Section. Through his leadership, Mr. Joshi has contributed immensely to promoting interdisciplinary research, entrepreneurship, and technological awareness across academia and industry.

## *3. Technical Insights and Key Themes*

(a) 5G as a Revolution in System Design

Mr. Joshi emphasized that 5G represents a shift in thinking — from network-centric models to service-based architectures (SBA) that integrate communication, computation, and control. He explained how network slicing allows the creation of customized virtual networks tailored to specific applications such as industrial automation or emergency services.

He encouraged students to go beyond user-level understanding and delve into 5G's protocol stack, service orchestration, and API-driven architecture, which enable flexibility and scalability in real-world deployments.

(b) Application Domains that Bring 5G to Life

The speaker explored several key domains where 5G technologies are transforming possibilities:

- Autonomous Vehicles – Leveraging ultra-low latency for safe and reliable vehicle-to-everything (V2X) communication.

- Industrial Automation – Enabling predictive maintenance, robotic coordination, and real-time process monitoring.
- Smart Healthcare – Powering remote surgeries, telemedicine, and wearable health systems through high-reliability links.
- Immersive Experiences – Supporting Augmented Reality (AR) and Virtual Reality (VR) with high bandwidth and seamless connectivity.
- Massive IoT Connectivity – Enabling billions of devices to communicate efficiently across diverse environments.

Each domain, he noted, leverages a unique capability of 5G — be it ultra-low latency, enhanced mobile broadband, or massive machine-type communication — all of which converge to form an intelligent, interconnected ecosystem.

(c) Convergence with Emerging Technologies

Mr. Joshi highlighted that the true power of 5G lies in its synergy with emerging technologies such as Artificial Intelligence (AI), Cloud and Edge Computing, and Cyber-Physical Systems (CPS).

He illustrated how edge computing brings computation closer to the data source, reducing latency, and enabling real-time analytics for critical applications like autonomous vehicles and industrial control. This fusion of communication and computation, he said, is redefining how modern systems are designed and operated.

## *4. Call to Action for Students*

One of the most inspiring aspects of Mr. Joshi's talk was his message to students:

"To every student and professional entering this evolving landscape — this is your moment to move from being *users of networks* to *architects of systems.* Understand how 5G's service-based core drives agility, how network slicing enables customization, and how its architectural philosophy opens new spaces for innovation."

He urged young engineers to explore IEEE platforms such as **ComSoc, TEMS, and Systems Council**, to stay at the forefront of technology through conferences, publications, and global collaborations.

The talk encouraged students to think not only as technology adopters but as **future innovators and contributors** to the development of connected intelligence systems that power Digital India and Industry 4.0.

## *5. Interactive Discussion*

The session concluded with an engaging Q&A segment. Students asked questions related to:

- Challenges in 5G deployment in India,
- Security implications of interconnected systems,
- Integration of AI-driven network optimization, and
- The roadmap towards 6G communication.

Mr. Joshi's responses combined technical clarity with real-world relevance, inspiring the audience to explore interdisciplinary domains where electronics, communication, and computing converge.

## *6. Learning Outcomes*

After attending the session, students gained:

- A conceptual and architectural understanding of **5G communication systems**.
- Awareness of how **emerging technologies** (AI, IoT, CPS, Cloud, Edge) integrate with 5G.
- Motivation to participate in IEEE's global knowledge ecosystem.
- Vision to contribute to India's **digital transformation and innovation initiatives**.

## *7. Conclusion and Acknowledgment*

The event concluded with a vote of thanks delivered by the IEEE Student Branch representative, expressing gratitude to Mr. Prashant Joshi for his visionary and inspiring address. Dr. Swati Kale, IEEE Student Branch Counselor, appreciated the session's relevance to modern communication studies and commended students for their active engagement.

The expert session on *"5G Communication and Emerging Technologies"* successfully reflected the essence of **IEEE Day 2025** — celebrating innovation, collaboration, and the global impact of technology. It also marked another milestone in the IEEE Student Branch's commitment to nurturing technical excellence and leadership among future engineers.

## *8. Photographs*


**Reported by:**
*IEEE Student Branch, RSCOE*