ISSUE21,AUGUST2025

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NEW HORIZON COLLEGE OF ENGINEERING

THE CONNECT

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The Quantum Era: Promise, Pitfalls, and Post-Quantum Cryptography

Quantum computing represents one of the most revolutionary advancements in modern science. Unlike classical computers that rely on bits (0s and 1s), quantum computers use **qubits**, which can exist in multiple states simultaneously through the principles of superposition and entanglement. Key components include qubits, quantum gates for manipulation, and error-correction systems to preserve fragile quantum states.

Despite its promise, quantum computing faces significant challenges. Qubits are highly sensitive to noise, leading to errors that require sophisticated error correction. Scaling systems to a large number of stable qubits is another hurdle. Moreover, quantum hardware demands extremely low temperatures and complex infrastructure, limiting widespread deployment.

Inside this issue:

Still, the potential use cases are vast. Quantum computing could accelerate **drug discovery** by simulating molecular interactions, optimize **logistics and financial portfolios**, advance artificial intelligence, and solve previously intractable problems in material science and climate modeling.

However, alongside these opportunities lie profound risks in the field of cryptography. Current encryption methods, such as RSA and ECC, rely on the difficulty of factoring large numbers or solving discrete logarithms-tasks that powerful quantum algorithms, like **Shor's algorithm**, could break in seconds.

This means that sensitive data, from financial transactions to national security communications, could be exposed once large-scale quantum computers become practical.

To address these threats, researchers are developing **Post-Quantum Cryptography** (**PQC**)-new algorithms resistant to quantum attacks. Organizations like NIST are standardizing such protocols, ensuring future digital security. While quantum computing holds immense promise, preparing for its cryptographic risks is essential to

QUANTUM ERA

Why You Need Quantum Theory ?

- Reveals the Invisible World – Unlocks the mysteries of atoms, electrons, and photons beyond the reach of classical physics.
- Drives Today's Tech – Powers semiconductors, lasers, MRI scans, and the rise of quantum computers.
- Opens Tomorrow's Frontiers – Fuels breakthroughs in quantum sensing and unbreakable cryptography

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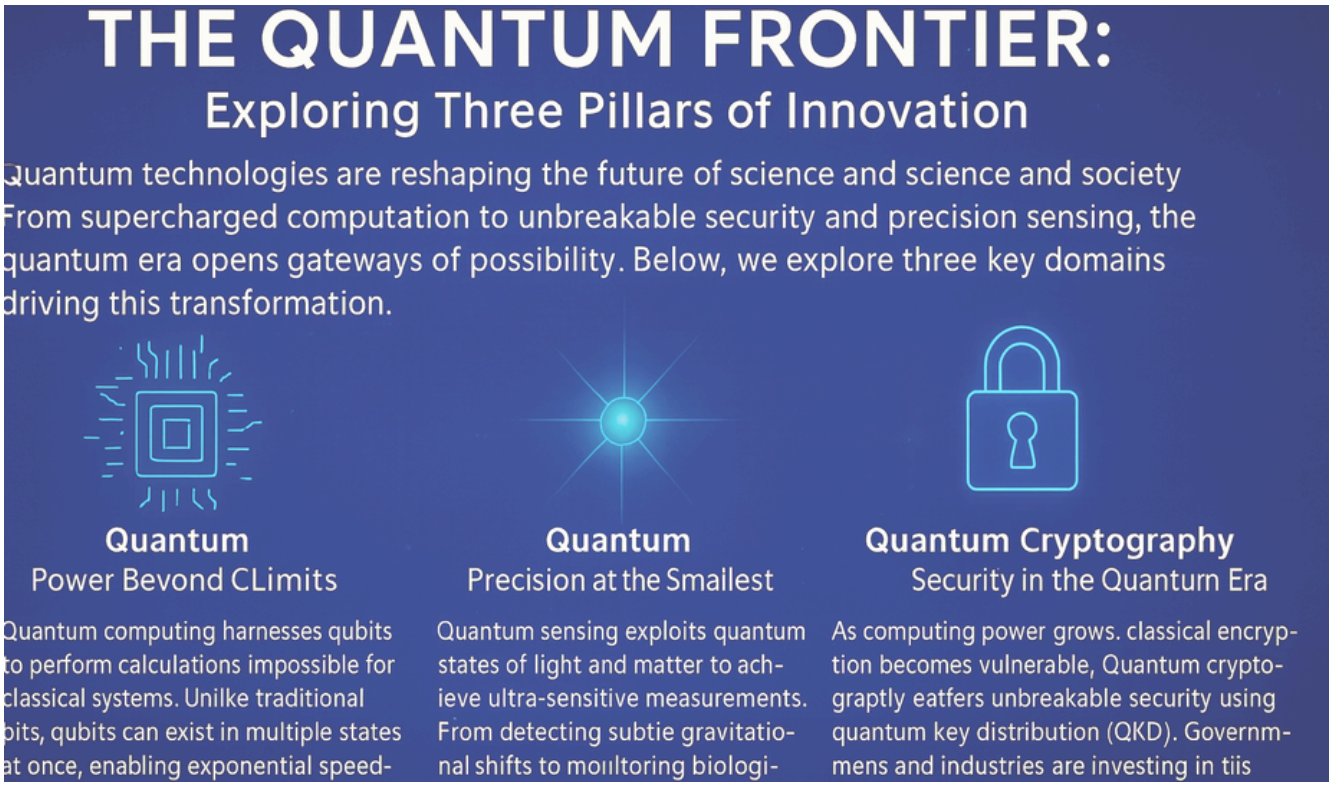
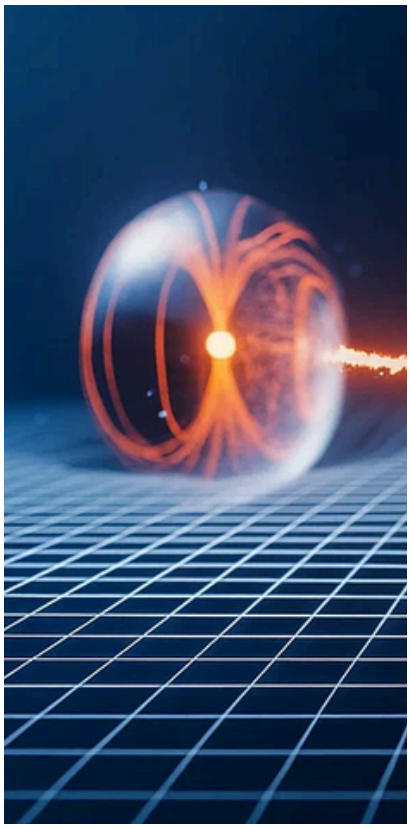


FACULTY ACHIEVEMENTS



Name of the Staff	Name of the award/achievements	Awarding Agency
Dr.Ishani Mishra	Best paper award	Presidency University, IEEE conference
Dr Rajesh G	Achievement as Evaluator	Ministry of Education's Innovation Cell, Government of India
Dr Rajesh G	Appreciation Letter for acting as Resource Person	Sandip Institute of Engineering and Management, Pune
Dr Rajesh G	Appreciation Letter for acting as Resource Person	Siddartha Institute of Science and Technology, AP

Expert Lectures

COORDINATORS: DR. JAYANTHI M & DR. P SUDHAKIRAN

Name of the Industrial Expert	Company Organization	Topic/ Subject	Semester	Hours engaged	Date
Dr. Vishal Saraswat, Head of Research and Innovation at Bosch.	Bosch	Cybersecurity Industry Challenge" on	VI	2	May 28th 2025,
Mr. Aloke Das	Founder of Lab and Lectures, and Chair of IEEE CASS Bangalore.	AI for Electronic Design Automation	IV	2	April 4th 2025,

ALUMNI TALK

COORDINATOR: PROF. ISHANI MISHRA

NAME OF THE ALUMNI AND CURRENT DESIGNATION	DATE OF THE EVENT	CONTRIBUTION
Mr. Abhijit Bhargava Stock Market Analyst at Convalexa Trading Training Centre, 8197283310	13-12-2024	Stock Market and Mutual Funds
Anju Gopinath Senior Software Engineer, Hexaware Technologies, 9739254255	10-12-2024	Bridging the gap between college and corporate:Introduction to Data Engineering
Vikas R,n IP Design Engineer at Insemi Technology Services Pvt Ltd., 8861720259	06-12-2024	Introduction to VLSI Design Flow:Unravel the mysteries of VLSI Design
Meghanashree C,Security Engineer at Andpad Inc, 9535139402	23-11-2024	“Navigating your path to the IT Industry: Key Prerequisites, Smart Placements and Global Opportunities
Mr.Lakshya Sharma,Intern in Product Engineering at Cadence Design Systems,8618719166	12-11-2024	Books to Boards
Mr.Ayush Bansal,Analog Layout Engineer at Capgemini Engineering,9927973457	09-11-2024	Unleash Your Potentials Through Hackathons

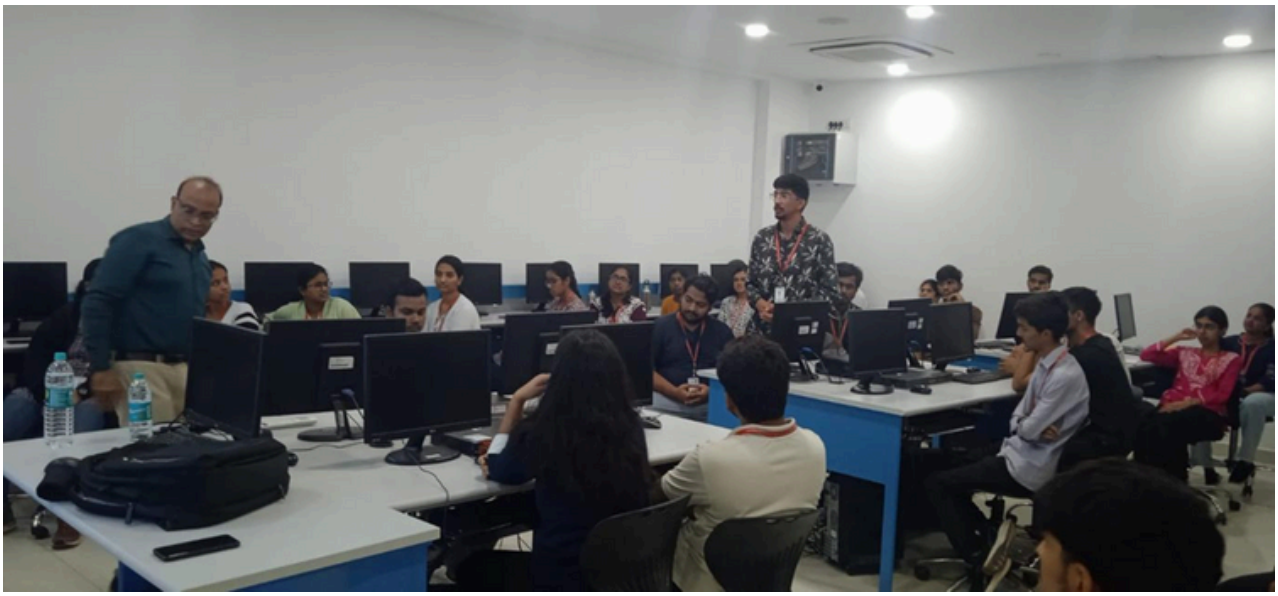
ALUMNI TALK

COORDINATOR: PROF. ISHANI MISHRA

WORKSHOPS:

COORDINATORS : PROF. T V S ADINARAYANA

Date	Resource Person	Title	Semester
28/05/2025	Mr.Mahesh M Devanagiri	Pre &Post Silicon Bring up and System Validation Emulation	I V



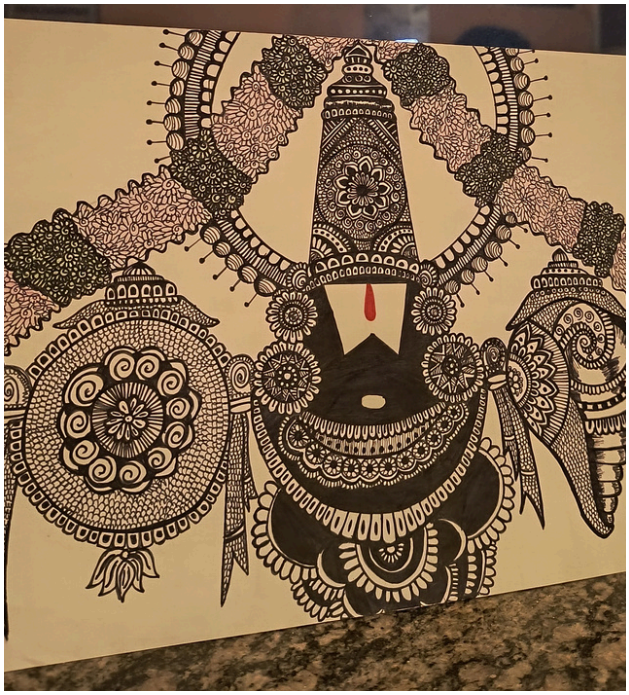
PLACEMENTS

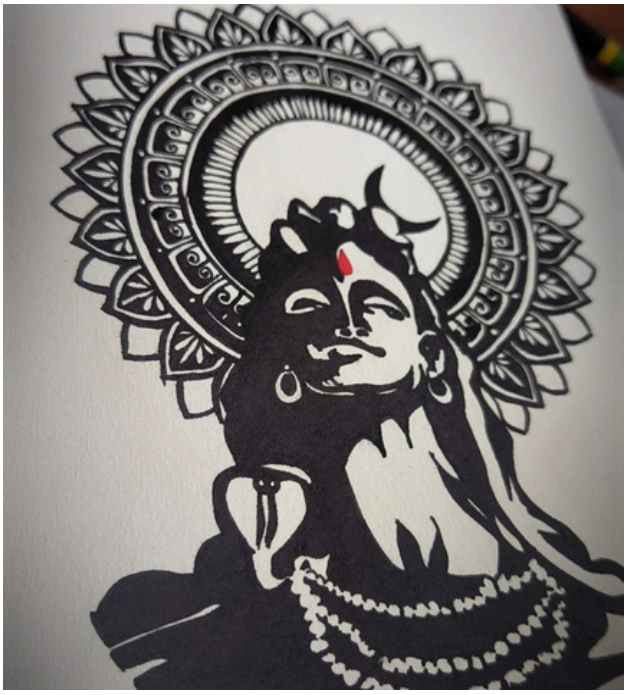
NAME OF ORGANISATION	NO. OF STUDENTS PLACED	SALARY OFFERED (LPA)
Belc CO., LTD.	1	₹4.40L
Bulk Liquid Solutions	2	₹3.00L
Capgemini	65	₹4.25L
Cubic Logics	2	₹4.50L
Epicor Software India Pvt Ltd	1	₹9.40L
Ernst & Young	2	₹6.40L
Eurofins IT Solutions India Pvt Ltd	2	₹10.70L
Infogain	1	₹4.40L
INFOSYS	12	₹3.60L
Intellipaat	2	₹5.00L
KPIT	2	₹4.50L
LTI Mindtree	2	₹4.00L

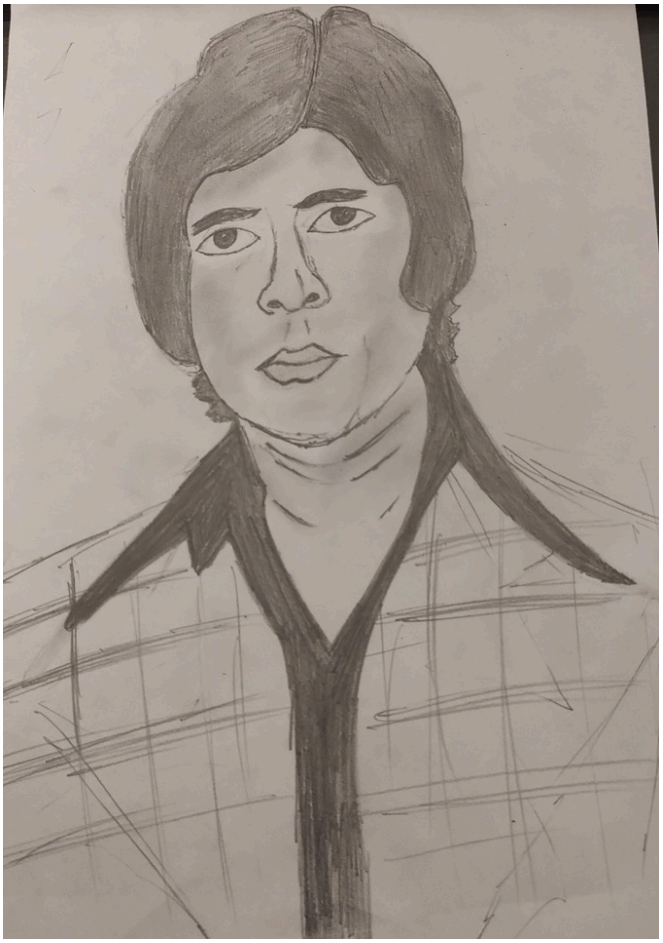
PLACEMENTS

NAME OF ORGANISATION	NO. OF STUDENTS PLACED	SALARY OFFERED (LPA)
Musigma	2	₹5.00L
Newjaisa	2	₹4.00L
Nineleaps Technologies	1	₹6.60L
Nokia	3	₹3.00L
Siemens	2	₹4.50L
Sopra Steria	3	₹6.00L
Spektra Systems	1	₹3.60L
UNISYS	1	₹8.00L
Zepto	5	₹4.50L
Microland	3	₹4.00L

STUDENT CORNER







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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Vision

To create high quality engineering professionals who can serve the society and earn global recognition.

Mission

- To build a strong foundation in Electronics and Communication Engineering aspects by exposing students to state-of-the-art technology and research, which helps the student with the application of knowledge.
- To strengthen the curriculum through interaction with industry experts and to equip the students with the required competency.
- To mould students to share technical knowledge and to practice professional and moral values.

Program Educational Objectives

PEO 1: To produce graduates with an understanding of the fundamentals and applications of Electronics and Communication Engineering.

PEO 2: To hone graduates with the ability to apply, analyze, design, and develop electronic systems.

PEO 3: To enhance graduates with the latest technologies to enable them to engineer products for real-world problems in Electronics and Communication.

PEO 4: To build leadership qualities, management skills, communication skills, moral values, team spirit, and lifelong learning ability for the graduates.

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PROGRAM OUTCOMES

UG – Engineering Program

- **PO1:** Engineering Knowledge: Apply knowledge of mathematics, natural science, computing, engineering fundamentals and an engineering specialization as specified in WK1 to WK4 respectively to develop to the solution of complex engineering problems.
- **PO2:** Problem Analysis: Identify, formulate, review research literature and analyze complex engineering problems reaching substantiated conclusions with consideration for sustainable development. (WK1 to WK4)
- **PO3:** Design/Development of Solutions: Design creative solutions for complex engineering problems and design/develop systems/components/processes to meet identified needs with consideration for the public health and safety, whole-life cost, net zero carbon, culture, society and environment as required. (WK5)
- **PO4:** Conduct Investigations of Complex Problems: Conduct investigations of complex engineering problems using research-based knowledge including design of experiments, modelling, analysis & interpretation of data to provide valid conclusions. (WK8).
- **PO5:** Engineering Tool Usage: Create, select and apply appropriate techniques, resources and modern engineering & IT tools, including prediction and modelling recognizing their limitations to solve complex engineering problems. (WK2 and WK6)
- **PO6**: The Engineer and The World: Analyze and evaluate societal and environmental aspects while solving complex engineering problems for its impact on sustainability with reference to economy, health, safety, legal framework, culture and environment. (WK1, WK5, and WK7).
- **PO7:** Ethics: Apply ethical principles and commit to professional ethics, human values, diversity and inclusion; adhere to national & international laws. (WK9)
- **PO8:** Individual and Collaborative Team work: Function effectively as an individual, and as a member or leader in diverse/multi-disciplinary teams.
- **PO9:** Communication: Communicate effectively and inclusively within the engineering community and society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations considering cultural, language, and learning differences
- **PO10:** Project Management and Finance: Apply knowledge and understanding of engineering management principles and economic decision-making and apply these to one's own work, as a member and leader in a team, and to manage projects and in multidisciplinary environments.
- **PO11:** Life-Long Learning: Recognize the need for, and have the preparation and ability for i) independent and life-long learning ii) adaptability to new and emerging technologies and iii) critical thinking in the broadest context of technological change. (WK8)

PROGRAM SPECIFIC OUTCOMES

PSO1 To demonstrate the ability to design and develop complex systems in the areas of next generation Communication Systems, IoT based, Embedded Systems, Advanced Signal, and Image Processing, latest Semiconductor technologies, RF and Power Systems.

PSO2 To demonstrate the ability to solve complex Electronics and Communication Engineering problems using latest hardware and software tools along with analytical skills to contribute to useful, frugal and eco-friendly solutions.

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION

Today the world has shrunk and the global village is marching to- wards technological revolution predominantly due to innovations in the field of Electronics and Communication. The field of Electronicsand Communication opens the doors to a myriad of opportunities and exciting challenges for the go-getters. The department of electronics & communication engineering is accredited by the National Board of Accreditation (NBA).

http://newhorizonindia.edu/nhengineering/department- of-electronics-and- communication-engineering/

The vision of the department is to create high quality engi- neering professionals who can transform society and earn global recognition The department is bestowedwith well designed and well maintained infrastructure. It is well equipped with interactive classrooms and laboratories with latest equipment for stu- dents to experiment and state of the art facilities.

The department also offers the VTU researchcentre for Ph.D. and M.Sc. (Engg.), for research. The enthusiastic teaching fraternity of the department besides being highly qualified, have the acumen to instil in students the urge to do better and bring out the best in them. Most of them have considerable experience in academicsand research as.Few of them have industrial experience as well. The Electronics & Communica- tion Engineering Program with its autonomous status is re-designed to cater to the needs of industry. e events, confer- ences and industrial visits are also organized on a regular basis. To give them practical exposure and developtheir technical and interpersonal skills the studentsof ECE depart- ment are required to execute various projects throughout their studies. Also they're motivated to publish re- search papers, and participate in national and international conferences as well. They take the lead in planning and executing various activities through Electronics Hobby Club, Technology Sharing Club, and Professional Connect club which definitely gives them an enthralling experience. Furthermore the students also undergo special placement training through value added programs.

Most of them get placed in reputed organizations such as Intel, Texas Instruments, AMD, Qualcomm, ARM, Schneider Electric, Bosch, Cisco Systems, Juniper Net- works, Vmware,Sony, Nokia, Accenture, Cap Gemini, IBM, HP, TCS, Infosys,Wipro, Mindtree and many more. Some students pursue higher studies in Indian and foreign universities, while there are quite a few of them who start their own ventures therebycontributing immensely in the growthof our society.As the famous quote goes "All work and no play makes Jack a dull boy. Studentsalso engage themselves in cultural, sportsand social activities. Many have taken it one step ahead and won gold medals and several trophies in sports and cultural events organized at different levels and several other institutions. Overall, the department provides a very posi- tive and nurturing environment, for students to develop and grow into into knowledgeable, skilled and produc- tive Electronics & Communication Engineers.