

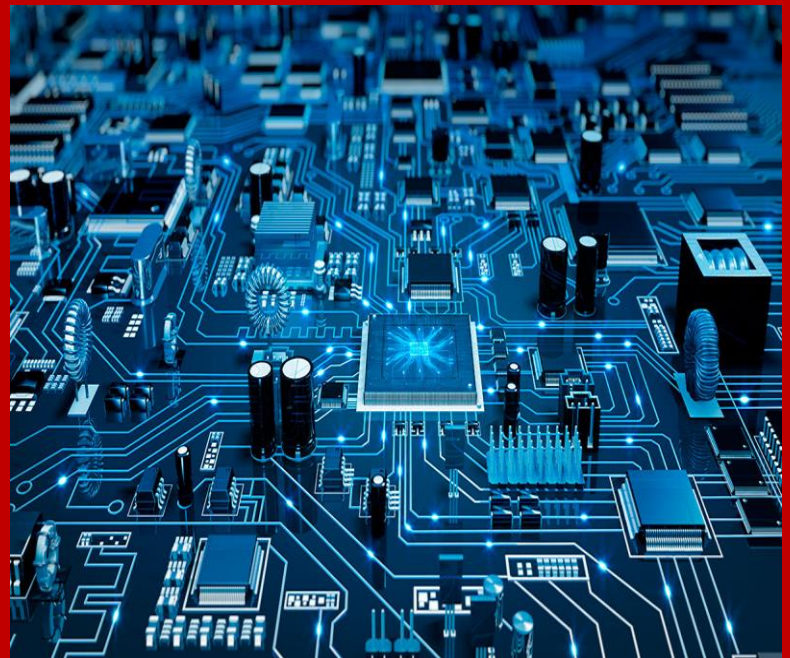


# GALGOTIAS COLLEGE OF ENGINEERING & TECHNOLOGY

**EC-NEWSLETTER 2023-24**

**Vol-10 ( ISSUE : 2)/ June 2024**

“EC-Newsletter” is the Bi-annual newsletter of the Department of ECE, Galgotias College of Engineering and Technology, Greater Noida highlighting the accomplishments of our students, faculty and staff. It mainly focuses on the major events organized, student and faculties research publications, achievements, campus placement, industrial interactions, industrial visits, higher studies details etc.



## **Department of Electronics & Communication Engineering**

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**Dr. R. V. Purohit**

**Faculty Editor**

**Mohd Alamgir khan**

**Student Editor**

**Anushka Maurya**

## MESSAGE FROM HEAD OF THE DEPARTMENT



It is my pleasure and honour to welcome you to the Department of Electronics and Communication Engineering of Galgotias College of Engineering and Technology.

Our department is committed to excellence in teaching, research, and innovation. With a focus on cutting-edge technologies, we aim to prepare our students to meet the challenges of the rapidly evolving field of Electronics and Communication. Our dedicated faculty members bring a wealth of knowledge and experience to the classroom and are actively involved in groundbreaking research that has a significant impact on our world. For our students, this department is your academic home, a place where you will acquire not only knowledge but also the skills, passion, and confidence needed to excel in your careers. We encourage you to actively engage in research projects, internships, and extracurricular activities that will enrich your educational journey.

As we embrace the digital age, the field of Electronics and Communication Engineering is at the forefront of transformative technologies like 5G, Internet of Things (IoT), artificial intelligence, and more. Our department is poised to lead in these areas, and we invite you to join us on this exciting journey. Please explore our website to learn more about our programs, research areas, and the incredible opportunities that await you here.

Thank you for choosing Galgotias College of Engineering and Technology and the Department of Electronics and Communication Engineering. We look forward to embarking on a journey of knowledge, discovery, and innovation together.

Best Wishes,

Dr. Rahul Vivek Purohit

## About ECE Department

Electronics and Communication Engineering is headed by Dr. Rahul Vivek Purohit and has 41 faculty members who have received their higher education from top-notch universities. The faculty members of this department are consistently doing well in teaching and research. The department offers B.Tech (Electronics and Communication Engineering) with 180 intake.

Presently, the B.Tech ECE program has been accredited by the National Board of Accreditation.

The B.Tech program attracts the brightest students in the state every year. The placement record of the department has always been impressive. Almost 100% of the students get jobs from the campus placement and many of them are getting it in core companies every year. We encourage the students to do design and research-based projects during their B.Tech degrees.

The department has state-of-the-art laboratories in almost all the areas of Electronics and Communication that has the latest simulation tools to cater to various specializations and are equipped with facilities for measurement, characterization, and synthesis of experimental as well as theoretical results. The department is actively involved in R&D activities and regularly publishes its research in reputed Journals and Conferences. The research areas include Wireless Communication and Networks, Microwave Engineering, Antenna design, VLSI Design, Signal and Image Processing, Communication Engineering, and Embedded Systems.

The Department holds MoU's with distinguished Organizations and Industries, mentioning a few include Huawei - ICT Academy, 3ST Technologies Pvt. Ltd., Noida, Maven Silicon, Bengaluru, Department of Electronics - Pattern Recognition and Machine Intelligence Group, Shantou University, China. It prides in having students placed in reputed companies with smart package and also focuses on developing and escalating the skill of analysis, designing and problem solving, amongst students required to extend their career growth.

A Center of Excellence (CoE) in IoT typically aims to establish a specialized and highly proficient team or facility focused on the effective and efficient use of IoT for various engineering and scientific applications. The primary objectives of a IoT Center of Excellence may include:

- Facilitate collaboration with other CoEs, departments, and external entities.
- Host knowledge-sharing sessions, workshops, and seminars on IoT-related topics

- Provide training programs and resources to enhance the IoT skills of team members.
- Encourage innovation in IoT applications for solving complex engineering challenges.

COE-RF Circuits and Antenna Simulation aim to provide students with practical experience and understanding in the design, analysis, and simulation of high frequency circuits. The learning objectives are as follows:

Gain knowledge about the key components used in RF circuits, such as antenna, amplifiers, filters, mixers, and oscillators.

Use simulation tools to model and analyze the performance of antennas in different scenarios. This may include optimizing antenna parameters for specific applications.

Understand the fundamental principles of antennas, including types, radiation patterns, and impedance matching. Explore the design and analysis of basic antenna structures.

#### Drone Technology and Ham Radio

To encourage the students to gain the knowledge and work for the application in aerial photography, agriculture, plant protection, micro selfie, express transportation, disaster rescue, wildlife observation, monitoring infectious diseases, mapping, news reporting, power inspection. Surveillance in areas and terrains where troops are unable to safely go.

Amateur radio, also known as ham radio, is the use of the radio frequency spectrum for purposes of non-commercial exchange of messages, learning and practicing ham radio skills can be intellectually stimulating. It involves understanding radio equipment, antennas, propagation, and communication protocols. Ham radio provides fast and reliable communication during emergencies

## **INSTITUTE VISION & MISSION**

### **Vision**

To be a leading educational institution recognized for excellence in engineering education and research producing globally competent and socially responsible technocrats.

### **Mission**

**IM1:** To provide state of the art infrastructural facilities that support achieving academic excellence.

**IM2:** To provide a work environment that is conducive for professional growth of faculty and staff.

**IM3:** To collaborate with industry for achieving excellence in research, consultancy and entrepreneurship development.

## **DEPARTMENT VISION & MISSION**

### **Vision**

To be recognized as a center of excellence in Electronics and Communication Engineering for the quality and global education, interdisciplinary research and innovation, to produce committed graduates who can apply knowledge and skills for the benefit of society.

### **Mission**

**DM1:** To provide quality education by providing state of the art facility and solutions for global challenges.

**DM2:** To provide a framework for promoting the industry-institution collaboration and empower the students in interdisciplinary research.

**DM3:** To transform students into socially responsible, ethical and technically proficient engineers with innovative skills and usage of modern tools.

**DM4:** To make the students corporate ready with spirit and necessary interpersonal skills.

## PROGRAM OUTCOMES

- P01 Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- P02 Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- P03 Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- P04 Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- P05 Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
- P06 The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
- P07 Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
- P08 Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- P09 Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- P010 Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- P011 Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- P012 Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent And life-long learning in the broadest context of technological change.

## PROGRAM SPECIFIC OUTCOMES

**By the completion of Electronics & Communication Engineering program the student will be able to:**

**PSO1:** Design and develop models for analog & digital electronic circuits and systems.

**PSO2:**Design, develop and test electronic and communication systems for applications with real Time constraints.

## PROGRAM EDUCATIONAL OBJECTIVES

<b>PEO 1</b>	Graduates will excel in their career by acquiring knowledge in the field of Electronics and Communication Engineering with the usage of modern tools and emerging technologies.
<b>PEO 2</b>	Graduates will have the capability to analyze real life problems of the society and produce innovative solutions.
<b>PEO 3</b>	Graduates exhibit professionalism, ethical attitude, communication skills and team work in core engineering, academia and research organizations through professional development and lifelong learning.

## GUEST LECTURE

1. On May 31, 2024, **Rajat Kumar Singh** delivered a compelling talk on "Innovations in VLSI Design: Emerging Technologies and Future Trends." With an audience of 45 students and 5 faculty members, Rajat explored the forefront of VLSI design, shedding light on groundbreaking technologies and offering predictions about future advancements in the field. His presentation not only highlighted current innovations but also inspired future research and exploration.

2. On June 20, 2024, **Mr. Vaibhav Mishra** gave his presentation on "Digital Design and Implementation on FPGA." This session attracted 56 students and 6 faculty members, who were introduced to the intricacies of digital design and the practical aspects of FPGA implementation. Mr. Mishra's in-depth discussion provided attendees with a clearer understanding of the design process and its applications, equipping them with knowledge that is directly applicable to their engineering endeavors.

## ALUMNI TALK



1. On January 30, 2024, **Sachin Vishwakarma**, a distinguished alumnus, led a thought-provoking session on "AI in Career Guidance and Skill Development." With 48 students in attendance, Sachin explored how artificial intelligence is revolutionizing career guidance and enhancing skill development. His talk highlighted the latest AI tools and strategies, offering practical advice on how students can leverage these technologies to

shape their career paths effectively.

2. On April 18, 2024, **Rajneesh Verma**, another esteemed alumnus, delivered an engaging presentation on "Career Planning from Campus to Corporate." This session, which saw the participation of 62 students, provided valuable insights into navigating the transition from academic life to the corporate world. Rajneesh shared his personal experiences and offered actionable tips for effective career planning, helping students prepare for the





challenges and opportunities that lie ahead in their professional journeys.

### AWARDS WON BY STUDENTS

Year	Name of the award/ medal	University/State/National/ International	Sports/ Cultural / Technical	Name of the student	Position
2023-24	Table Tennis	State Level	Sports	Preetam Kumar Yadav	2nd
2023-24	India Hackathon	National	Technical	Masood Asim	Winner

### Faculty Publications:

#### Faculty Publications in Journals

S. No	Author(s), in sequence as mentioned in the paper	Title	Journal and Publisher Name	Volume, Issue, ISSN, Page No., Year of Publication
1	Richa Sharma, Asok De, N.S.Raghava	Multi band multi polarised fractal antenna for white space TV band	Internal Journal of Electronics	ISSN: 0020-7217, Jan 2024
2	H. Kumar, G. Srivastava, Sachin Kumar	Design and Analysis of Self-Hexplexing Antenna Using SIW Hexagonal Cavity	Journal of Electronic Materials	vol. 53, pp. 1651-1659, 2024
3	N.S. Babu, A.Q. Ansari, Sachin Kumar, G. Singh, B.K. Kanaujia, B. Goyal	Low-Profile Dual-Band Monopole Antenna with EBG Array for LTE, WLAN, Wi-MAX, and ISM Band Applications	Sadhana	vol. 49, Article ID 56, 2024
4	C. Bajaj, D.K. Upadhyay, Sachin Kumar, B.K. Kanaujia	GPS-Integrated RFID Antenna with AMC Backing for IoT-Based Sensing and Tracking Applications	IEEE Transactions on Antennas and Propagation	vol. 72, no. 2, pp. 1929-1934, 2024

5	N. Singh, T. Khan, Sachin Kumar, B.K. Kanaujia, H.C. Choi, K.W. Kim, K. Rambabu, S.R. Rengarajan, A.A. Kishk	Ultra-Thin Flexible Rectenna Integrated with Power Management Unit for Wireless Power Harvester/Charging of Smartwatch/Wristband	Scientific Reports, Nature	vol. 14, Article ID 7447, 2024
6	L. Harlan, V. Kaim, Sachin Kumar, M. Susila, S.K. Palaniswamy, B.K. Kanaujia	Conformal wideband ingestible capsule MIMO antenna system for multi-channel communication in biotelemetry	AEU-International Journal of Electronics and Communications	vol. 178, Article ID 155305, 2024
7	J.A. Joy, S.K. Palaniswamy, Sachin Kumar, M. Kanagasabai, S. Bashyam, M.I. Hussein	Modern Reflectarray Antennas: A Review of the Design, State-of-the-Art, and Research Challenges	IEEE Access	vol. 12, pp. 46717-46740, 2024
8	C. Bajaj, D.K. Upadhyay, Sachin Kumar, B.K. Kanaujia	Directional Energy-Efficient Metasurface-Backed RFID Reader Antenna for Minimizing Tag-Detection Uncertainty in IoT Networks	IEEE Journal of Radio Frequency Identification	vol. 8, pp. 88-97, 2024
9	N.S. Babu, A.Q. Ansari, D. Gangwar, B.K. Kanaujia, Sachin Kumar, S.K. Gupta	Low-Profile Dual-Polarized Antenna Loaded With Electromagnetic Band-Gap Structures	Wireless Personal Communications	DOI: 10.1007/s11277-024-11095-2
10	M.J. Kim, J.S. Lee, B.C. Min, J.S. Choi, Sachin Kumar, H.C. Choi, K.W. Kim	Ultra-Wideband Vertical Transition in Coplanar Stripline for Ultra-High-Speed Digital Interfaces	Sensors	vol. 24, no. 10, Article ID 3233, 2024
11	C. Bajaj, D.K. Upadhyay, Sachin Kumar, B.K. Kanaujia	High-Gain 3-D RFID Reader Antenna with Cubic Metasurface Backing and 360° Coverage for Internet of Vehicles	IEEE Transactions on Antennas and Propagation	DOI: 10.1109/TAP.2024.3407659
12	S. Jayant, G. Srivastava, Sachin Kumar, A. Desai, B. Goyal, A.H.M. Alkawgani	Circularly Polarized Sixteen-Port Flexible UWB MIMO Antenna Featuring Polarization Diversity for WBAN Applic	International Journal of RF and Microwave Computer-Aided Engineering	vol. 2024, Article ID 8442770, 2024
13	Deepti Sharma, Sachin Kumar, Rakesh Nath Tiwari, Hyun Chul Choi & Kang Wook Kim	On body and off body communication using a compact wideband and high gain wearable textile antenna	Scientific Reports, Nature	Volume 14 ISSN: 2045-2322 Page No: 17 Year of Publication: June 2024

14	Harendersingh, Arunkumarrana,jayan tgi	Automatic Machine Learning Model for Enhanced Partition and Identification of Breast Disorders in Breast MRI Scan	Biomechanics and Biomedical Engineering: Imaging & Visualization	2024, VOL. 12, NO. 1, 2378734
15	Gaurav Saxena ,AlkaVerma ,RanjanaKumari , Ruchi Agarwal	High Q ultra-thin nona-band polarization insensitive homogeneous single layer metasurface for electronics and space industry with electromagnetic interference and antenna radar cross section reduction	Materials Today Communications	Volume 40 , August 2024, 109674
16	Sonal Gupta, Shilpee Patil, Chhaya Dalela , Binod Kumar Kanaujia	Dual-Sense Circularly Polarized Stacked Fractal Slotted Antenna for WLAN/Bluetooth System	Wireless Personal Communications	<a href="https://doi.org/10.1007/s11277-024-10966-y">doi.org/10.1007/s11277-024-10966-y</a>

### **Faculty Publications in Conferences**

<b>S. No.</b>	<b>Author(s), in sequence as mentioned in the paper</b>	<b>Title</b>	<b>Conference Name and Details</b>	<b>ISSN/ISBN, Page No., Year of Publication</b>
1	L. Harlan, M. Susila, Sachin Kumar	Conformal Circular Loop Antenna for Leadless Cardiac Transcatheter Pacing System	2024 International Conference on Wireless Communications, Signal Processing and Networking, Chennai	21-23 March 2024
2	L. Harlan, M. Susila, Sachin Kumar	A Conformal Ingestible Ultra-Wideband Capsule Antenna for Biotelemetry Communication	2024 International Conference on Recent Advances in Electrical, Electronics, Ubiquitous Communication, and Computational Intelligence (RAEEUCCI)	979-8-3503-5454-6, 17-19 April 2024
3	Shivam Gupta, Somica Pathak; Saurabh Singh; Satyam Singh; Ujjwal Yadav	Model Order Reduction of Linear Time Invariant System	2024 International Conference on Communication, Computer Sciences and Engineering (IC3SE)	9-11 May 2024

## INDUSTRIAL VISIT

1. The ECE Department organized an industrial visit for 2nd year ECE on 18th Jan. 2024 to Excel Technologies, a well-renowned manufacturer and supplier of educational kits. The visit was organized by HOD-ECE Professor (Dr.) Swaminathan Ramamurthy, Dr. ShilpeePatil (Industrial visit Coordinator), Mrs. Priyanka Mathur, and Mr. Mukesh Chauhan were the faculty coordinators for the industrial visit. The Visit started traveling from the college Campus at 1:00 PM by our college bus. A total of 23 students from ECE 3rd semester along with faculty coordinators, Mrs. Priyanka Mathur and Mr. Mukesh Chauhan have visited the company.



2. The ECE Department organized an industrial visit for 3<sup>rd</sup> year ECE on 1<sup>st</sup> & 2<sup>nd</sup> April 2024 to **Haier Appliances India Pvt Ltd**, a well-renowned manufacturer and supplier of washing machines & home appliances. The visit was organized by HOD-ECE Professor (Dr.) Swaminathan Ramamurthy, Dr. ShilpeePatil (Industrial Visit Coordinator), Dr. Ashish Gupta, Mr. Deependra Sinha, and Dr. Brajesh Kumar Singh were the faculty coordinators for the industrial visit.

The visit kicked off with a detailed presentation on Haier products, focusing on the company's commitment to quality manufacturing of home appliances. The presentation was conducted in a two-way communication format, allowing for interactive discussions and inquiries from the students. This segment provided valuable insights into Haier's product range, technological advancements, and quality assurance processes. Following the presentation, the students were taken on a tour of the manufacturing unit, specifically the washing machines sector. We were guided through the assembly lines and witnessed firsthand the intricate processes involved in manufacturing Haier washing machines. The

tour provided a comprehensive understanding of the manufacturing techniques, quality control measures, and attention to detail exercised by Haier.



## MINI PROJECT EXHIBITION

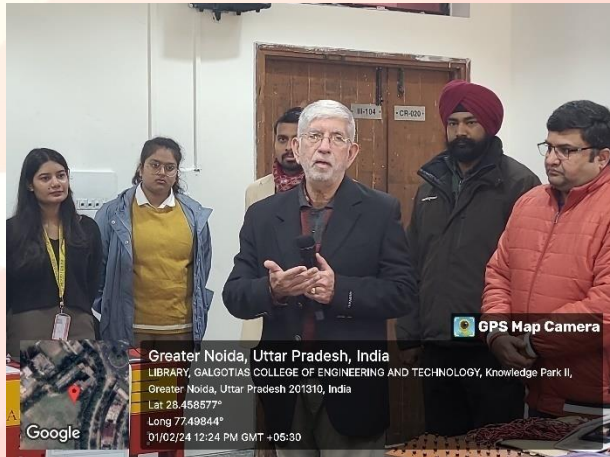
Giving an opportunity for the students to exhibit their technical intellect and creativity. ECE Department has organized a mini project Exhibition on Project Based Learning of Electronics Engineering on 01/02/2024. Gp. Capt. (R) Dr. P. K. Chopra, Director General, inaugurated the exhibition in the presence of Prof. Vikram Sharma, Director GCOP, and Dr. R. Swaminathan, HoD ECE. They took a comprehensive tour of the exhibition, engaging with students and gaining insights into the projects. The participants were congratulated for their participation.



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## **GNIX (An official club of Department of ECE, GCET)**

### **G-care**

The Electronics and Communication Department Club, GNIX is a vibrant and multifaceted community dedicated to nurturing the technical and personal growth of its members. On the technical front, the club organizes a variety of activities such as hands-on workshops, where members can learn about circuit design, microcontroller programming, and robotics. Regular guest lectures by industry professionals and academics provide insights into cutting-edge technologies and current trends in electronics. The club also encourages participation in national and international competitions, hackathons, and project exhibitions, allowing members to showcase their skills and innovation. Beyond technical pursuits, the club places a strong emphasis on personal and professional development. Soft skills workshops on topics like leadership, teamwork, and effective communication are frequently held to prepare members for the collaborative nature of the tech industry. Social events, including team-building exercises, networking sessions, and informal gatherings, foster a sense of community and camaraderie among members. By offering a holistic blend of technical training and personal development opportunities, the GNIX club aims to equip students with the knowledge, skills, and confidence to excel in their academic and professional journeys.

## IETE Students' Chapter

IETE STUDENTS' CHAPTER was started in October 2018. This society is chaired by Dr. R V Purohit and co-chaired by Mr. Ravi; Students from first year to final year are members of this society and till now there are 106 students. Apart from student members, there are faculty members also.

## Placement Highlights 2024: A Stellar Year of Success

The Department of Electronics and Communication Engineering is proud to announce yet another successful placement season for the year 2024! With a record-breaking 80% placement rate, our students have secured diverse and exciting roles across top-tier companies. This year has been marked by exceptional achievements, showcasing the hard work, dedication, and talent of our students and the department's commitment to preparing them for the future.



**GALGOTIAS**  
EDUCATIONAL INSTITUTIONS

#GetYourSelfPlaced

**OUR RISING STARS** | **SAURABH SINGH CHHONKAR**  
BTECH (ECE), BATCH 2023-24

Package (CTC) | ₹ **5.57 LACS**

Placed at | **airtel**



**GALGOTIAS**  
EDUCATIONAL INSTITUTIONS

#GetYourSelfPlaced

**OUR RISING STARS** | **DEVESH PANDEY**  
BTECH (ECE), BATCH 2023-24

Package (CTC) | ₹ **5.57 LACS**

Placed at | **airtel**



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EDUCATIONAL INSTITUTIONS

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**OUR RISING STAR** | **VAISHNAVI GUPTA**  
BTECH (ECE), BATCH 2023-24

Package (CTC) | ₹ **4 LACS**

Placed at | **L&T Technology Services**



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EDUCATIONAL INSTITUTIONS

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**OUR RISING STAR** | **SOMICA PATHAK**  
BTECH (ECE), BATCH 2023-24

Package (CTC) | ₹ **6.08 LACS**

Placed at | **EMERSON**

Eminent Recruiters:

