

# ELECTROBUZZ

2023

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INDRAPRASTHA INSTITUTE of  
INFORMATION TECHNOLOGY DELHI

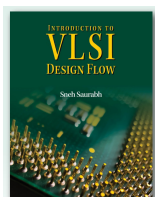




# Faculty News & Achievements

- *Dr. Sneh Saurabh's new book, "Introduction to VLSI Design Flow," was released by Cambridge University Press recently.*

*The book provides a comprehensive view of the entire VLSI design flow and will be helpful for students, practicing engineers, and researchers in the field of VLSI design.*



Introduction to VLSI Design Flow

Sneh Saurabh

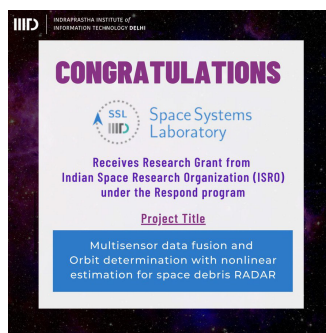
FORMAT: PAPERBACK  
ISBN: 978-1-109-20081-3  
PRICE: ₹ 950.00 | \$ 99.99 | £ 74.99

Chip designing is a complex task that requires an in-depth understanding of very large-scale integration (VLSI) design flow, skills to employ sophisticated design tools, and keeping pace with bleeding-edge semiconductor technologies. This hard textbook is focused on fulfilling these requirements for students, as well as being a reference for professionals in the industry. It helps the user develop a holistic view of design flow through a well-sequenced set of chapters on logic synthesis, verification, physical design, and testing. Illustrations and pictorial representations have been used liberally to simplify the explanations. Additionally, each chapter has a set of activities that can be performed using freely available tools and provide hands-on experience with the design tools. Review questions and problems are given at the end of each chapter to revise the concepts. Recent trends and references are listed at the end of each chapter for further reading.

**Sneh Saurabh** is Associate Professor in the Department of Electronics and Communication Engineering, Indraprastha Institute of Information Technology, New Delhi. He has rich experience in the semiconductor industry, having spent 16 years working for industry leaders such as Cadence Design Systems, Synopsys India, and Magma Design Automation. His research interests include VLSI design and automation, nanoelectronics, and energy-efficient systems.



- *The Space Systems Laboratory under Dr. Sanat K. Biswas has received a research grant for "Multisensor data fusion and Orbit determination with nonlinear estimation for space debris RADAR" from ISRO for 3 years. In this project, end-to-end simulation and space-debris tracking algorithms will be developed to enhance India's Space Situational Awareness capability further.*



- *Prof. Vivek Bohara (HoD @ECE IIITD) received the CHANAKYA Faculty Fellowship from Technology Innovation Hub (TIH) IoT at IIT Bombay.*



- *Dr. Sanat K Biswas advised and mentored Bushra Ansari (Ph.D. student), who was selected for Australia India Research Students Fellowship Program.*

- *ISRO has awarded Dr. Sanat K Biswas a three-year research grant for his work on "Multisensor data fusion and Orbit determination with nonlinear estimation for space debris RADAR".*

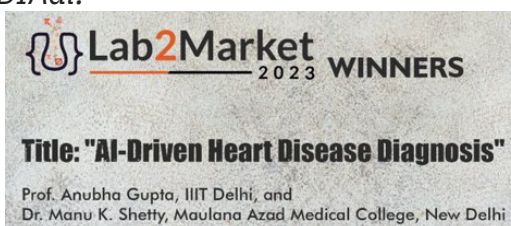
- *Dr. Angshul Majumdar was elected as a member of the EURASIP Technical Area Committee on Signal and Data Analytics for Machine Learning.*



- *Dr. Pravesh Biyani, Associate Professor, IIITD received the CHANAKYA Faculty Fellowship from Technology Innovation Hub (TIH) IoT at IIT Bombay.*



- *Prof. Anubha Gupta, Professor, IIITD & Dr. Manu K. Shetty, Associate Professor, Maulana Azad Medical College, New Delhi have won first prize at the Lab2Market 2023 event organized by INDIAai.*



# Student Interviews

## Anand Singh

### **What inspired you to pursue a Ph.D. in 5G and 6G communication technologies?**

*First and foremost, I would like to express my gratitude to my advisers, Prof. Anand Srivastava, and Prof. Vivek Ashok Bohara, for their belief and constant support. It's been a great journey as part of the Wirocomm and CoE LiFi lab. It helped me refine both technical and non-technical aspects. Now, I am much more confident and comfortable driving any research project independently. I feel very fortunate to have been part of the group. The dedicated approach of both groups toward any task is very critically.*

### **What inspired you to pursue a Ph.D. in 5G and 6G communication technologies?**

*Ph.D. pursuit in 5G and 6G communication is driven by the shortage of spectrum in ultra-high frequency bands and increasing wireless data traffic. Visible light communication (VLC) is proposed as a candidate technology to enable high-throughput communication in next-gen cellular standards. Integration of 5G NR with a VLC system has been proposed for the cellular downlink architecture. Backhaul and wireless front-ends need to be improved to support high-throughput applications. Demand is much more severe in indoor scenarios where maximum data usage occurs.*

### **What challenges does one face conducting research in 5G networks and beyond in India?**

*India needs to adopt technology rapidly and innovate to fulfill the ambitious features of 5G/6G and enhance the system capacity to support high bit rates of the order of TB/s. It should influence the roadmap of new technologies, meet India-specific requirements and overcome the barriers faced by developing countries in standardization. India, as a late entrant, is still in the early stages of building innovation capability.*



### **Can you brief us on your research work so far?**

*In my Ph.D. research, I studied indoor visible light communication (VLC) systems with human blockages. I proposed a hybrid Cellular-VLC link and optimized the system performance by positioning LEDs and receivers and using point process models. I also worked on human blockage estimation and visible light positioning. Currently, I'm exploring optical IRS-aided and UAV-enabled VLC systems in the presence of human blockages with random User equipment (UE orientation).*

# Student Interviews

## Md. Aamir

**What prompted you to pursue a dual degree program in ECE at IIIT Delhi?**

*"After completing my B.Tech project, I wanted to pursue further research on the same topic with Dr. Anuj Grover. Pursuing a dual-degree program seemed like a suitable option as it allowed me to devote ample time to my research, pick my thesis in my master's year, and earn both Bachelor's and Master's degrees within five years instead of six, with the same skill set."*

**You have been one of the most regular faces on the basketball court. What role did it play in your college life and did it help manage academics better?**

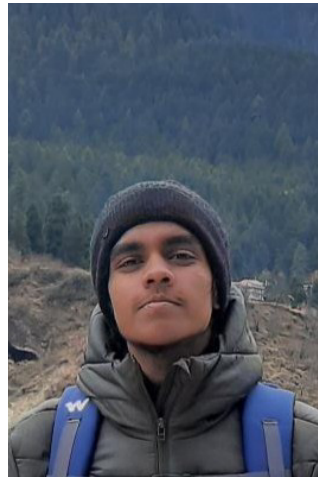
*"I would say basketball was an crucial part of my college experience. Academically, it was very helpful as, whenever I used to feel anxious about some deadline, stressed about the semester exams, or anything else, playing basketball helped me to cut myself off from these, allowed me to take a break, clear my mind, and return back with a fresh mind."*

*Additionally, basketball helped me a lot with my social anxiety. It was a very easy way to connect with people, and discussing things. I got to interact with a lot of people and discuss about their journey, interests, etc through this."*

**What are your thoughts on the new Btech program in Electronics and VLSI Engineering?**

**How can students make the most of it?**

*"Coming from the semiconductor industry, I can confidently say that the VLSI Design courses offered at our college closely align with industry standards. The projects offered in these courses are the condensed version of real-world scenarios encountered in the industry. Also, most ECE courses require students to use some tools (again conforming to the industry standards) to work on their projects, that helps them gain hands on experience."*



**What are your favorite memories from your time at IIIT Delhi?**

*"One of the fondest memories I have of my time at IIITD are the small gatherings and dinner parties that I enjoyed with my friends at the glass room."*



# Student Achievements



*The ECE department at IIITD is known for its excellence in research and development and for preparing students for industry and/or research careers. Several student achievements highlight this success.*

- *At the IEEE SPS Conclave, Ashutosh Vaish, a Ph.D. student at SBILab, showed two displays that took second and third place. Additionally, he discussed his work on TL-HARDI, which accelerates the rebuilding of HARDI data using transform learning.*
- *Tathagat Pal (UG Student) and Gurinder Singh's (Ph.D Scholar.) article "Optical IRS Aided B5G V2V Solution for Road Safety Applications" received the best paper at IEEE ANTS 2022 conference, IIT Gandhinagar, Dec 2022..*
- *Bushra Ansari (PhD Scholar) was chosen for the Australia India Research Students Fellowship Program to study GPS and NavIC conflict at Macquarie University. The AIRS program supports emerging researchers from Australia and India to undertake short-term research exchanges. In this program, She will visit Macquarie University for 8 weeks to work on the Effect of DME interference on NavIC and GPS signals.*
- *A presentation by Belal Iqbal (Ph.D.), titled "A Common Mode Insensitive Process Tolerant Sense Amplifier Design for In-Memory Compute Applications in 65nm LSTP Technology," was given at VLSID'23.*
- *Syed Asrar ul Haq (Ph.D.), Animesh Sharma (MTech), and Anurag Gulati (UG Student) earned second place in the VLSID 2023 Design Contest for their study of deep-learning enhanced channel prediction on system-on-chip.*
- *ANROL, a project by Akshat Vikram S. and Yash Aggarwal, was shortlisted for demo as well as poster presentations in IEEE COMSNETS 2023, receiving internship and collaboration offers from the industry.*

# Alumni Achievements

**Mukul Chhabra**, a former student of the ECE Department at Indraprastha Institute of Information Technology Delhi (IIIT Delhi). Mukul, a 2020 graduate, has made substantial strides in the field of waste management with his startup venture, ScrapUncle. We delve into the inception of ScrapUncle, its mission, services, notable achievements, and recent recognition on the popular TV show, Shark Tank India Season 2 , Episode 25.



## **ScrapUncle:** Revolutionizing Waste Management in India

ScrapUncle, founded by Mukul Chhabra in 2019, is a Delhi-based business that leverages technology to streamline India's recyclable trash management problem. Through the ScrapUncle app and website, individuals can conveniently sell a wide range of recyclable materials, such as newspapers, appliances, plastics, electronics, and metals. The platform provides transparent prices and prompt doorstep collection, promoting responsible recycling practices.



**Anant Sharma** is a self-made entrepreneur passionate about using technology to disrupt markets. He is the co-founder and CEO of Tweek Labs, a sports technology company that gained national recognition after being featured on Shark Tank India S1, becoming IIIT Delhi's first startup to achieve this feat. His vision is to develop accessible and high-performance motion analysis sportswear that provides every aspiring athlete with detailed reports to improve their performance.

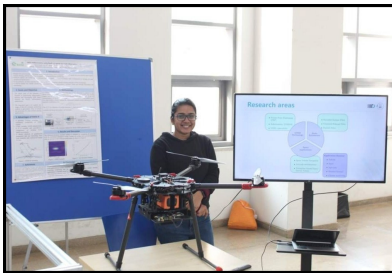




# Industry Day

*The ECE department of IIIT Delhi has set the bar high with their recent Industry Day on January 21, 2023, which was a grand success! The event was held in a hybrid mode, making it possible for industry partners, faculty, students, and research scholars to connect and collaborate. The day was packed with exciting activities, including keynote speeches from top companies, research showcases by various labs, panel discussions, and networking opportunities.*

*Attendees gained valuable insights into the latest developments in various research fields, and students had the chance to interact with industry experts, gather insights, and forge invaluable connections.*



*The Industry Day was a fantastic opportunity for the ECE department to showcase their research and work to industry professionals, increasing the department's visibility and providing a platform for networking and building contacts with the industry. Some of the event's eminent speakers included Shounak Roy from Netapp, N Kannan from Cadence, Sayan Sen Gupta from Nokia, Sunny Manchanda from DRDO DYSL Lab, Krishna Kumar Banka from Synopsys India, Pankaj Malhotra from Microsoft, Air Marshall Rajeev Sachdeva from Indian Air Force, Wing Cdr Satyam Kushwaha from Indian Space Association, and Maj Gen Rajan Kochhar from Indian Army.*



# 10 YEARS OF ECE



*It was a day to remember for the ECE department of IIIT Delhi as they celebrated a milestone achievement - their 10th anniversary on October 7th, 2022. Established in 2012, the department has been a beacon of excellence in engineering, sciences, and entrepreneurship, providing students with the keys to unlock limitless knowledge and prepare them for higher studies and research opportunities. The anniversary celebration was an exciting two-hour event, filled with fun and informative activities. Attendees had the opportunity to delve into the department's history, meet with faculty and participate in lucky draw contests and quizzes.*

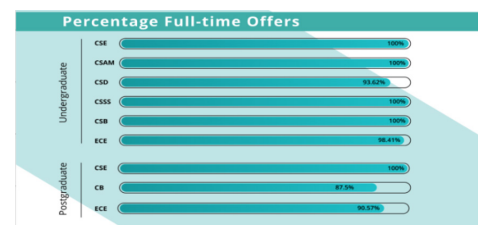
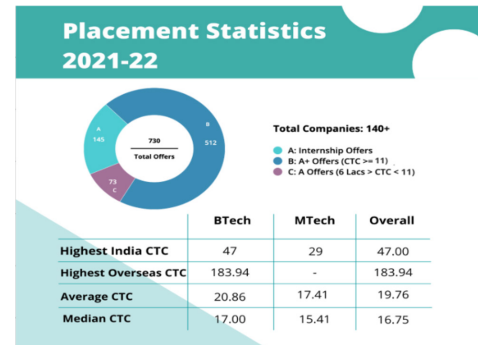
*Alumni and faculty members were also invited to share their memories of the department and take a stroll down memory lane. The celebration was an excellent opportunity everyone to come together and celebrate the department's achievements over the past decade. The event highlighted the department's legacy, contributions, and impact in the field of electronics and communication engineering. The department looks forward to continuing its legacy and pushing the boundaries of research, innovation, and education in the years to come. Here's to another decade of excellence and success!*



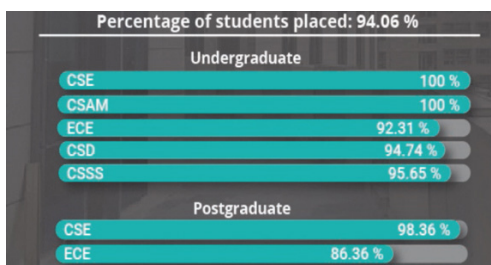
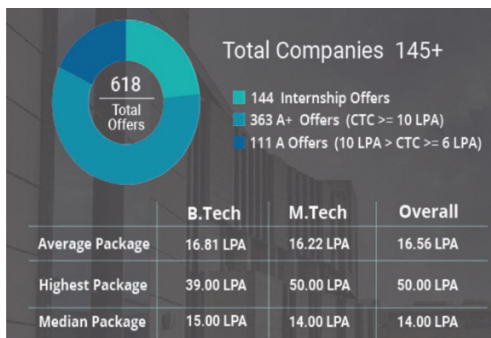
# Placement Stats

## 2022 Batch

- Students eligible for placement:- 525
- Number of companies visited:- 140+
- Total Offers:-730 (585 Full time+ 145 intern offers)
- Full time:- 512 A+ Offers (CTC => 11 LPA)
- Full time:- 73 A Offers (6 lakhs < CTC < 10.5 LPA)
- Indian offers:- 578
- Overseas Offer:- 07
- Highest Compensation Overseas:- 183.94 LPA
- Highest Compensation Indian:- 47.00 LPA for B.Tech & 29.00 LPA for MTech
- Average B.Tech. Package:- 20.86 LPA
- Average M.Tech. Package:- 17.41 LPA
- Overall Average salary:- 19.76 LPA
- Campus Overall Percentage:- 98.10 %
- ECE Percentage:- 98.1% for B.Tech & 90.57% for MTech



## 2021 Batch



- Students eligible for placement:- 438
- Number of companies visited:- 145+
- Total Offers:-619 (475 Full time+ 144 intern offers)
- Full time:- 364 A+ Offers (CTC => 10 LPA)
- Full time:- 111 A Offers (6 lakhs < CTC < 10 LPA)
- Indian offers:- 471
- Overseas Offer:- 04
- Highest Compensation Overseas:- 78.27 LPA
- Highest Compensation Indian:- 39.00 LPA for B.Tech & 50.00 LPA for MTech
- Average B.Tech. Package:- 17.05 LPA
- Average M.Tech. Package:- 16.22 LPA
- Overall Average salary:- 16.69 LPA
- Campus Overall Percentage:- 94.06 %
- ECE Percentage:- 92.31% for B.Tech & 86.36% for MTech

# Centre for Quantum Technologies at IIIT-D

*The Centre for Quantum Technologies at IIIT Delhi offers exciting opportunities for engineering students in the field of quantum technologies. Here are some key avenues the center provides:*

*1. Cutting-edge Research: Engage in advanced research in quantum computing, communication, and materials with renowned faculty members.*

*2. Skill Development: Enhance your expertise in quantum computing, communication, and related areas through specialized courses and workshops.*

*3. Hands-on Experience: Gain practical experience in working with state-of-the-art quantum computing and communication tools.*

*4. Industry Collaborations: Collaborate with industry partners on projects and internships to gain exposure to real-world applications.*

*5. Networking and Mentorship: Interact with experts, attend workshops, and build valuable connections for research collaborations and job opportunities.*

*6. Entrepreneurship and Innovation: Explore entrepreneurial opportunities in the quantum domain with support from the center.*

*7. Academic Programs: Benefit from specialized academic programs focused on quantum technologies.*

*8. National and International Collaborations: Collaborate with institutions worldwide to exchange knowledge and experiences.*

*9. Contributing to India's Quantum Technology Landscape: Make a significant impact on India's quantum technology development.*

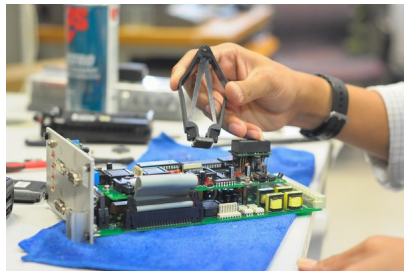
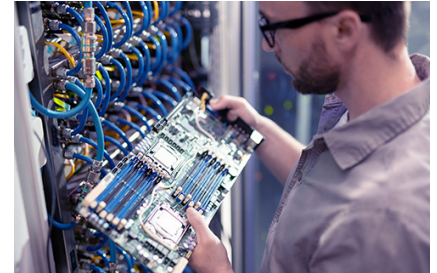
*The Centre for Quantum Technologies at IIIT Delhi opens doors to research, skill development, industry collaborations, networking, and academic growth in quantum technologies. Embrace this exciting field and equip yourself for a successful career.*





# Career Opportunities in the EVE program offered by the ECE Dept.

- *Design Engineer: Responsible for designing electronic circuits and systems to meet client needs.*
- *Test Engineer: Ensures electronic circuits meet specifications through thorough testing.*
- *Manufacturing Engineer: Develops efficient manufacturing processes for electronic devices to ensure quality standards are met.*
- *Research Engineer: Conducts innovative research in electronics and VLSI design to advance technology.*



- *Analog/Digital IC Design Engineer: Designs integrated circuits for processing analog and digital signals.*
- *Embedded Systems Engineer: Develops dedicated electronic devices within larger systems.*
- *FPGA/ASIC Design Engineer: Designs programmable gate arrays and application-specific integrated circuits for diverse digital circuits.*
- *Systems Engineer: Manages the overall design and development of electronic systems.*

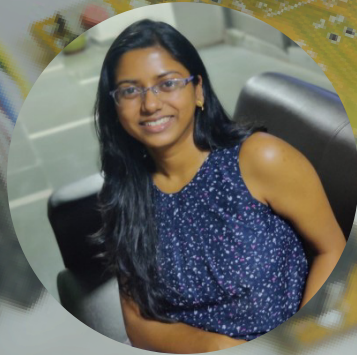
- *VLSI Engineer: Designs, develops, and tests complex integrated circuits with millions or billions of transistors.*
- *Software Engineer: Specializes in software development for electronic applications.*
- *Product Manager: Oversees electronic product development and marketing strategies.*
- *Various CS Profiles: Includes software development engineers and other computer science-related roles.*





# The Team

## Advisors



Shanvi Srivastava

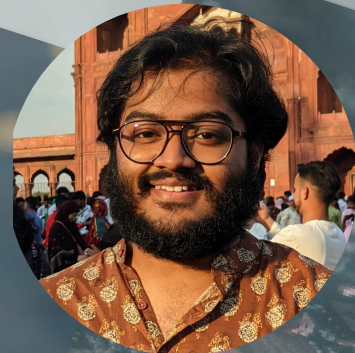


Deep Shikha

## Design Team



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