

# Rakesh Kanjilal

✉ kanjilal@outlook.in ☎ +91 8240276499  
🌐 therootnode.pages.dev in LinkedIn | Rakesh Kanjilal  
**Nationality:** Indian **Address:** Kolkata, West Bengal, 743248

## Summary

---

An innovative and detail-oriented postgraduate student pursuing a Master's degree in VLSI Design and Embedded Systems at the National Institute of Technology Sikkim. Possess a robust foundation in Electronics and Communication Engineering with a Bachelor's degree from Mizoram University (Central). Demonstrated expertise in circuit design, embedded systems, and IoT through hands-on projects and internships. Proficient in a variety of software tools including Cadence, Calibre, Xilinx VIVADO, VCS, TCAD Sentaurus, and COMSOL Multiphysics, complemented by skills in Python, C, TCL and hardware troubleshooting. Adept at integrating theoretical knowledge with practical applications in electronic sensors and hardware design. Eager to contribute technical skills and innovative thinking in a dynamic and growth-oriented professional environment.

## Training Experience

---

- **Prasar Bharati, DDK Santiniketan (Onsite)** **10/2019**  
(Vocational Trainee)  
Obtained knowledge and practical exposure to the Broadcasting system (Technical Aspects).
- **Pie Infocomm Pvt. Ltd. (Remote)** **06/2021**  
(Industrial Trainee)  
Gained theoretical and practical knowledge about many electronic sensors and hardware. Completed two basic projects on Embedded systems and IoT.

## Education

---

- **Diploma in Engineering** **Class of 2020**  
Falakata Polytechnic Institute, Alipurduar, West Bengal  
Department of Electronics and Tele-Communication Engineering  
First class with Distinction || 7.7 CGPA
- **Bachelor of Technology** **Class of 2023**  
Mizoram University, Aizawl, Mizoram  
Department of Electronics and Communication Engineering  
First Class || 7.51 CGPA
- **Master of Technology** **Class of 2025**  
National Institute of Technology Sikkim, Ravangla, South Sikkim  
VLSI and Embedded System  
Pursuing || 7.6 CGPA (till 2nd semester)

## Skills

---

Web Development, Python, C, TCL, Verilog, VHDL.

- **Technical Software:** Cadence design suite, Calibre, Xilinx Vivado, Synopsys VCS, COMSOL Multiphysics, MATLAB, Proteus, IC Compiler.
- **Computers:** Hardware Assembling, Technical Problem solving, Installation, Operating Systems (Windows, Linux - Redhat, Kali, Ubuntu), System Administration, Network Security, Network Administration
- **IoT & Embedded Systems:** Arduino IDE, IoT components, Integration for real-life applications
- **Soft Skills:** Communication, Team Work, Critical thinking and problem-solving, Leadership
- **Microsoft Office:** Word, PowerPoint, Excel (Advanced level)

## Academic Projects & Works

---

- **“Smart Robo-Car” controlled by Voice Command** **Diploma (2019)**  
Made an Arduino-based Robo-car automated by voice command like movements (speed, rotations). Did the project for the partial fulfillment of my diploma in engineering.
- **“Smart Irrigation System with GSM” & “4 Way Pedestrian Traffic System”** **Pie Infocomm Pvt. Ltd. (2021)**  
During the internship, after training, completed two projects on “Embedded System” & “IoT” respectively. The main objective for the “Smart irrigation system with GSM” was to make a system that can monitor the whole agricultural properties like soil moisture, sensing the water tank, and decide what to do based on the sensor reading as well as notify the farmer with the proper status of the field through SMS. The second project, the “4 Way Pedestrian Traffic System,” was a model to reduce road accidents and a solution for pedestrian deaths due to the traffic control system.
- **Analysis of Capacitive Micromachined Ultrasonic Transducer** **Graduation (2023)**  
was Part of a research-based project during graduation under the guidance of the project co-ordinator funded by Defence Research and Development Organisation (DRDO). Designed CMUT (Capacitive Micromachined Ultrasonic Transducer) cell in COMOSL Multiphysics Software, analyzed cell behavior and properties, and later published my work.
- **Master’s (2023-2025)** **Pursuing**  
Designed fundamental analog circuits, including Inverter, Common Source Amplifier, Current Mirror, Operational Amplifier, Differential Amplifier, and Low Noise Amplifier, as well as various components of Phase Locked Loop (PLL). Optimized these circuits using the SCL 180nm technology node in Cadence, developed layouts, and performed verification with Calibre (Mentor Graphics). In the digital domain, designed ALU, 16x4 memory, and various gates. Additionally, designed and analyzed the behavior of MOSFET, HEMT, and FinFET devices using TCAD Sentaurus. Currently focused on designing ADC (Analog to Digital Converter).

## Course & Certifications

---

- Completed and passed two courses "Analog IC Design" and "Digital IC Design" - from IEEE CASS (Institute of Global Education)
- High-Performance Spectre Simulation - by Cadence Design System (Digital credential badge issued)
- Advanced SKILL Language Programming – by Cadence Design System (Digital credential badge issued)
- Virtuoso Visualization and Analysis vIC23.1 – by Cadence Design System (Digital credential badge issued)
- 5G mmWave Handset System Design – S1: Simulation and Verification of the RFIC (Transceiver) vICADV20.1 – by Cadence Design System (Digital credential badge issued)
- Jasper Formal Expert – by Cadence Design System (Digital credential badge issued)
- Completed the Learning path of TCAD Sentaurus - from Synopsys Learning
- Completed 3-week Online Summer Training program on VLSI and Embedded Systems conducted by Indraprastha Institute of Information Technology Delhi (earned certificate of excellence performance).
- Foundation of Project Management & Data Analyst – by Google
- TCS YEP Trainee
- Training on Artificial Intelligence - funded by Ministry of Electronics and Information Technology, Govt. of India
- Career Essentials in System Administration – by Microsoft
- Career Essentials in Project Management – by Microsoft
- Critical Thinking and Problem Solving – by LinkedIn Learning & PMI
- Learning FPGA Development – by LinkedIn Learning
- MATLAB Fundamentals – by MathWorks (Digital credential badge issued)

## Technical Sessions & Workshop

---

### By ChipIN-CDAC team

- RTL Design and Verification
- Analog Custom Design Flow
- RedHawkSC
- Semi & Full Custom IC Design Flow
- Siemens Calibre EDA Tool

### By MSME

- Advanced Entrepreneurship and Skill Development Training Programme on "Nano-scale VLSI design for MSME sectors"

### By Synopsys Team

- Five-Day Technical (Online) Workshop on RTL to GDS - II Flow

## Publications

---

- Rakesh Kanjilal & Reshmi Maity, "A Comparative Study between Silicon Carbide and Silicon Nitride based Single Cell CMUT," Journal of Electronics and Informatics, September 2023, 5(3):320-334, DOI: 10.36548/jei.2023.3.006

## Language Proficiency

---

- Bengali (Native)
- Hindi (Full Professional)
- English (Working Professional)



RAKESH KANJILAL

October 21, 2024

BH-4, National Institute of Technology Sikkim  
Barfung Block, Ravangla Sub-Division,  
Dist. Namchi, Sikkim - 737 139