RAJANA RAMA SATYA SAI DURGA PRASAD

MS(Research) Candidate
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RESEARCH INTERESTS

Semiconductor Fabrication, Terahertz Devices, Semiconductor-based Quantum Devices, Quantum Computing, 2D Material Devices.

WORK EXPERIENCE

Industry

- Assistant Systems Engineer in the domain of Information Security in Tata Consultancy Services for the period July 2021 to October 2022

Research July 2024 – Present

- **M.S (Research)** , IIT Delhi, India (July 2024 – Present)
  Supervisor: Prof. Santanu Manna
- **B.Tech.**, SASTRA DEEMED TO BE UNIVERSITY, India (July 2017 – Aug 2021)
  Thesis: Random Number Generation And Image Processing Operations Using Quantum
  Supervisor: Prof. Padmapriya Pravinkumar

Teaching Assistanship July 2024 - Present

- Introduction to Electrical Engineering (ELL101), EE, IIT Delhi, during 2024-2025 (Fall Semester).
- Introduction to Electrical Engineering Lab (ELP101), EE, IIT Delhi, during 2024-2025 (Spring Semester).
- Quantum Electronics (ELL745), EE, IIT Delhi, during 2024-2025 (Spring Semester).
- Digital Electronics (ELL201), EE, IIT Delhi, during 2025-2026 (Fall Semester).
- Digital Electronics (ELL1401), EE, IIT Delhi, during 2025-2026 (Fall Semester).

EDUCATION

Masters (M.S (Research) in Integrated Electronics and Circuits, Electrical Engineering
July 2024 - Present
IIT Delhi, New Delhi
CGPA: 8.6/10.0
Related courses: Quantum Electronics (ELL745), Semiconductor Processing Lab (ELP830), Physics of Semiconductor Devices and Control(PYL702), Technology of RF and Microwave Solid State Devices (CRL725), Quantum Optics (PYL748), Integrated Photonics (OPL714), Selected Topics in RFDT-III (Quantum Communications - CRL733) and MS Research Project (ELD895)

Bachelor of Technology (B. Tech.) in Electrical and Electronics Engineering *2017-2021*
SASTRA DEEMED TO BE UNIVERSITY, Tamil Nadu
CGPA: 8.225/10.0

Intermediate *2017*
Aditya Junior College, Bhimavaram, West Godavari, Andhra Pradesh.
Percentage: 98.0

High School *2015*
Bhashyam High School, Bhimavaram, West Godavari, Andhra Pradesh.
CGPA: 9.8/10.0

PROJECTS

- **Log-Periodic Antenna for THz Applications** (**2024–Present**) – Ongoing MS (Research) project involving design, EM simulation, and fabrication of planar log-periodic antennas for terahertz frequency applications. Work includes cleanroom processing, antenna characterization, and optimizing radiation efficiency at THz bands for communication and sensing applications. *Skills: Antenna Design, HFSS, Semiconductor Fabrication, THz Devices.*
- **Router 1x3 RTL Design and Verification** (**2023**) – Designed and verified a router that accepts 8-bit data packets on a single input port and directs them to one of three output channels. Created a full RTL design in Verilog/SystemVerilog and validated functionality through FPGA tools and simulation environments. *Skills: Verilog, SystemVerilog, Vivado, Quartus Prime, ModelSim.* (VLSI Training Project)
- **AHB-APB Bridge Protocol Verification** (**2023**) – Developed a UVM-based testbench to ensure AHB-APB bridge protocol compliance with ARM AMBA standards. Built constrained-random stimulus and coverage models, significantly improving verification confidence and SoC reliability. *Skills: Verilog, SystemVerilog, UVM, QuestaSim.* (VLSI Training Project)
- **Quantum Random Number Generation and Image Processing** (**2021**) – Built quantum circuits exploiting superposition and entanglement to generate secure random numbers, enhancing cryptographic security. Also developed a quantum-to-classical mapping workflow to process images, demonstrating how quantum methods can accelerate classical image analysis. *Skills: Qiskit, Python, Image Processing.* (Bachelor Thesis Project)

SCHOLARSHIPS AND NATIONAL EXAMINATION

- **Teaching Assistant scholarship in M.S (Research)**.
  at IIT Delhi, from Ministry of Human Resource Development (MHRD).
- **GATE** Qualified-2024.

COURSES AND WEBINARS

Hardware & Device Training

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- Certified in **LabVIEW Programming and Instrumentation** (**2024**) – measurement automation, experimental control, and hardware–software integration.
- Completed **Advanced VLSI Design and Verification** (Maven Silicon, **2023**) – industry-level training in CMOS circuits, UVM, SystemVerilog, and chip verification workflows.
- Successfully completed **Quantum Computing using Indigenous Simulator (QSim)** (CDAC India, **2023**) – simulated and benchmarked quantum circuits on India's national quantum framework.
- Obtained the **Womanium Quantum Hardware Certificate** (**2022**) – foundational training in quantum hardware platforms, qubit devices, and experimental techniques.
- Gained hands-on training on **Nanomaterials and Nanodevices** (Impulse Technology, **2025**) – practical exposure to RESCU (DFT+DFPT) and NanoDcal (DFT+NEGF) solvers for nanoscale device modeling

Recognitions & Quantum Programs

- Selected for the prestigious **IBM Qiskit Advocate Program** (**2025**) – recognition for contributions to the global quantum community, beginning at Tier-0 level.
- Completed the **Qiskit Global Summer School** (IBM, **2025**, 2024, 2023, 2020) – intensive two-week global program on quantum algorithms, chemistry, and hardware integration.
- Awarded the **Womanium Global Quantum+AI** (**2024**, 2023) and **Quantum Sensing** (2023) certifications – bridging quantum computing, AI, and sensor technology.
- Achieved distinctions in **IBM Quantum Challenges** – competitive problem-solving in quantum algorithms and applications (**2023 Spring**; **2022 Fall, Advanced**; **2021 Africa**).

COMPETENCIES

Programming Languages	C, C++, Python, MATLAB, Verilog, SystemVerilog
EDA & Verification Tools	Quartus Prime, ModelSim, QuestaSim, Vivado, UVM
Scientific/Quantum Tools	Qiskit, MATLAB
Embedded Platforms	Arduino, Raspberry Pi
Office/Documentation	Microsoft Office, LaTeX, Overleaf
Operating Systems	Windows, Linux (with Shell Scripting)
Languages	English, Telugu, Hindi, Tamil

SEMICONDUCTOR FABRICATION & RESEARCH TOOLS

Cleanroom Processes	Exposure to cleanroom protocols and semiconductor fabrication
Layout Design Tools	KLayout, Clewin (GDS file preparation for lithography)
Simulation Tools	Ansys HFSS (antenna simulations)
Design & CAD	AutoCAD (antenna and device structure design)
Data Analysis	MATLAB, Python, OriginPro (plotting)
Measurement & Instrumentation	LabVIEW (experimental control, automation)
Collaboration Tools	GitHub (version control and research code management)

INTERESTS AND ACTIVITIES

Swimming, Cycling

Listening to Music

Playing Badminton and Billiards

Exploring new places and cultures; continuous learning

REFERENCE

Prof. Santanu Manna, Department of Electrical Engineering, IIT Delhi, 110016, India.
Email: mannasan@ee.iitd.ac.in

DECLARATION

I do hereby declare that the information furnished above is true to the best of my knowledge.

Rajana Rama Satya Sai Durga Prasad