CHANDRA MOULI SIRISALA

Buffalo, NY (Open to Relocate) | (716) 817-4867 | chandramoulisirisala@gmail.com | LinkedIn | Portfolio

Education

Master of Science in Electrical Engineering **Aug 2024 – Dec 2025**
University at Buffalo, USA
- Relevant Coursework: Semiconductor Devices I & II, VLSI Electronics, Digital Signal Processing, MIMO Wireless Communications, Wearables & Implantable Sensors, Internet of Things (IoT).

Bachelor of Technology in Electronics & Communication Engineering **Aug 2021 – Apr 2024**
Krishna University, India
- Relevant Coursework: Microcontrollers & Interfacing, Control Systems, Digital Signal Processing, VLSI Design, Optical Communication, CMOS IC Design.
- Foundational training through a **Diploma in Electronics & Communication Engineering** (2018–2021): Digital Electronics, Linear ICs, Microprocessors, Microwave Communication.

Technical Skills

Programming & Scripting: C, Python, MATLAB
Embedded Systems: Raspberry Pi, Arduino UNO, GPIO, Real-Time Data Acquisition, Low-Power Embedded Design
Hardware & Circuits: Analog & Digital Circuits, PCB Design Basics, Sensor Interfacing, Power Regulation
RF & Wireless: Microstrip Patch Antenna Design, RF Simulation, S-Parameter, VSWR, Radiation Pattern, 5G Fundamentals
EDA & Simulation Tools: ANSYS HFSS, LTSpice, Cadence Virtuoso
Sensors & IoT: Temperature, Humidity, Soil Moisture, Light, Motion, Proximity, NPK Sensors
Tools & Platforms: Git, GitHub, Linux Terminal, Real-Time Sensor Dashboards

Projects

Raspberry Pi–Based Smart Sensor Monitoring & Dashboard System (GitHub) **Fall 2025**
- Enabled real-time environmental monitoring across **5+ sensors** by designing and integrating a multi-sensor embedded system using **Raspberry Pi GPIO** and calibrated sensor interfaces.
- Achieved $>$**95% sensor data reliability** during continuous operation by implementing fault-tolerant data acquisition, validation, and retry logic using **Python and GPIO/I^{2}C/SPI handling**.
- Reduced manual monitoring effort by **60%** by developing a live dashboard and automated structured data logging using **real-time visualization and CSV-based logging pipelines**.

AI-Enabled Smart Thermostat System **Fall 2024**
- Enabled intelligent, context-aware HVAC control by developing an embedded smart thermostat using **temperature, motion, and ambient-light sensors** with real-time sensor fusion logic.
- Improved environmental response latency by **40%** by implementing event-driven, sensor-based decision logic using optimized embedded control routines.
- Reduced idle power consumption by **25%** by applying low-power operating strategies through **duty cycling, sensor sleep states, and efficient power regulation design**.

E-Shaped Microstrip Patch Antenna with DGS (HFSS) *(Published, IRJET)* **Spring 2024**
- Achieved high-performance radiation at **5.2 GHz** with strong impedance matching by designing an E-shaped microstrip patch antenna with **Defected Ground Structure (DGS)** using **edge-fed architecture** modeled in **ANSYS HFSS**.
- Improved return loss to **–30 dB** and maintained **VSWR** $\approx$ **1** by optimizing patch geometry, feed location, and DGS parameters through iterative **parametric sweeps** and **S-parameter analysis**.
- Enhanced antenna gain and radiation directivity by suppressing surface-wave losses using DGS-based ground modifications and validating performance via **far-field radiation pattern analysis**.

Printed Microstrip Patch Antenna Design for 5G – HFSS *(Published, IRJET)* **Spring 2024**
- Designed a compact antenna suitable for **sub-6 GHz 5G applications** by modeling and simulating a printed microstrip patch antenna using **ANSYS HFSS**.
- Improved impedance matching and signal efficiency by **30%** by optimizing feed position and patch dimensions to achieve **VSWR** $<$ **2** through iterative parametric sweeps.
- Validated multi-band wireless performance by analyzing **S-parameters, bandwidth, and radiation patterns** using far-field and return-loss analysis.

Internships

Intern – All India Radio (AIR), Visakhapatnam **May 2023 – Jul 2023**
RF Broadcasting Systems
- Supported **24**$\times$**7 RF broadcast operations** by analyzing end-to-end transmission chains across antennas, transmitters, and studio-to-transmitter links.
- Assisted RF troubleshooting using **oscilloscopes and multimeters** across transmitters, power amplifiers, and filters.

Trainee – Cisco Networking Academy **Jun 2020 – Nov 2020**
Networking & Switching
- Completed hands-on training in **routing, switching, and IP networking** using Cisco lab environments **and simulators**.
- Analyzed packet flow and protocol behavior using the **OSI and TCP/IP models** in simulated networks **for troubleshooting**.