Santa Clara, California
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Dhruval Potla

LinkedIn
Portfolio Website
GitHub Profile

Education

- **M.S. Electrical Engineering, SUNY University at Buffalo**, Buffalo. **Jan 2022–May 2023**
- **B.Tech Electronics and Communication Engineering, SRM University**, Chennai, India **2016–2020**

Skills

- Languages: Python, MATLAB, C
- Design Tools: Advance Design Systems (ADS), CST Microwave Studio, QUCS, GNU Radio, Ansys HFSS
- Hardware: Vector Network Analyser, Spectrum Analyser, Arduino, R-Pi, LoRaWAN, 8051

Work Experience

Research Lead **WINGS Lab** **Sep 2022–May 2023**
Chip-less RFID development team University at Buffalo, Buffalo

- Improved tag reading accuracy by 40% by developing SDR-based Chip-less RFID reader.
- Enhanced functionality by developing an Out-of-Tree (OoT) block in GNU Radio, adding dynamic center frequency adjustment. Leveraged skills in Linux and Python.
- Reduced cost of physical prototyping by optimizing designs through simulations in CST Studio.

Research Assistant **WINGS Lab** **May 2022–Aug 2022**
Chip-less RFID development team University at Buffalo, Buffalo

- Enhanced tag performance by 50% through optimal selection from 200 design combinations.
- Built makeshift anechoic chamber using cardboard and sponges, reducing interference by 40%
- Optimized tag design by comparing S-parameters calculated using Vector Network Analyser

Projects

- Designed and Simulated 1x4 beamsteering network circuit , Wilkinson's power combiner and switched line phase shifter. Achieved 1.69° resolution, precise design and effective phase control in QUCS. (GitHub)
- Increased signal strength, reduced interference, minimized signal loss and improved circuit performance by designing and simulating 3-section microstrip directional couplers in ADS. (GitHub)
- Analyzed digital modulation schemes in MATLAB, comparing BER and SER curves for optimum receiver detection. Utilized Jake's Fading Simulator to implement MIMO systems. (Github)
- Designed and simulated Low Noise Amplifier (LNA) circuit in QUCS. Achieved desired gain with excellent stability (S21) surpassing stringent specifications. (GitHub)
- Leveraged skills in C programming, knowledge of on-chip communications protocols (SPI, I2C, UART) by implementing hardware and software interfacing of CC2650 with LoRa and Sigfox LPWAN technologies.
- Achieved minimal power loss, optimal circuit matching, high radiation efficiency in SHF band in Patch antenna design simulations using Ansys HFSS. (GitHub)
- Improved gender classification accuracy by 45% for blurry fingerprint images using CNN and TenserFlow Keras. Leveraging skills in python and signal processing. (GitHub)