AKSHAY CHANDRASHEKAR RAIKAR

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EDUCATION

Master of Science in Electrical and Electronics Engineering **Aug 2021 – Feb 2023**

University at Buffalo, The State University of New York *GPA: 3.83/4.0*

- Relevant Courses: MIMO Wireless Communication, Principles of Modern Digital Communication, Principles of Networking, RF /Microwave Circuits, Digital Signal Processing, Internet of Things

Bachelor of Engineering in Electronics and Communication **Aug 2016 – Aug 2020**

Visvesvaraya Technological University, Bengaluru, India *CGPA: 8.10/10*

EXPERIENCE

Graduate Student Researcher **Nov 2021 – Jun 2022**

Wireless Networks 4 Smart Systems Lab, University at Buffalo

- Collaborated with a team of 3 to develop a low cost, low complex, LTE enabled Micro Phasor Measurement Unit (μPMU) by employing ARM Cortex-M3 Microcontroller.
- Transmitted synchrophasor frames using LTE cat-M module and evaluated LTE performance for a variable rate of transmission from 50 Hz to 80 Hz.
- Utilized internal timers of Arduino to bring down form factor and performed data transmission from multiple μPMUs to Phasor Data Concentrator (AWS Linux Cloud) by deploying UDP and assessed end-to-end delay.

Implementation of srsRAN **Jun 2022 – Jan 2023**

Wireless Intelligent Networking and Security Lab, University at Buffalo

- Integrated srsRAN, an open-source 4G/ 5G software radio suite to implement a flyable cellular network using SDR (Software Defined Radio) carried by an octocopter UAV.
- Decoupled components of srsRAN - Evolved NodeB (srsENB) and Evolved Packet Core (srsEPC), on separate embedded systems using Wi-Fi.
- Increased scalability of the 4G LTE network by connecting multiple srsENB to a srsEPC and achieved 3 times more performance with Intel Nuc as srsENB compared to Raspberry Pi 4.

TECHNICAL SKILLS

Languages: MATLAB, Python, Verilog
Certifications: 4G Network Fundamentals, 5G Mobile Networking, Google IT Certification, Python Data Structures
Core Competencies: LTE - protocol stack, call flow, OFDM, Networking (TCP, IP), Ambitious and Motivated
Equipments: Vector Network Analyzer, Oscilloscope, Multi-meter, USRP B210 SDR

PROJECTS

Wireless Communication Simulations using MATLAB **Feb 2022**

- Simulated BPAM, 4-PAM and 4-QAM digital modulation schemes with optimum receiver detection and examined results using BER vs SNR curves.
- Generated four independent Rayleigh fading channels using Jake's fading simulator and plotted number of channel samples to channel amplitude in dB scale to review slow and fast fading.
- Simulated MISO (2x1) and MIMO (2x2) system using maximum likelihood decoding at the receiver and compared system performance by tracing BER vs SNR curve.

3-section Microstrip Directional Coupler using ADS **Nov 2021**

- Designed a 20dB parallel line 3-section coupler with a center frequency of 3 GHz and bandwidth of 4 GHz.
- Realized directivity of 15 dB with low Insertion loss by compensating parasitic capacitances and inductances.

Performance Analysis of wavelets in De-noising Audio Signals **Nov 2021**

- Constructed denoised signal at receiver by decomposing, thresholding, and reconstructing of a realistic noisy audio signal. Analyzed performance of different mother wavelets and obtained SNR of 9.29 dB for db4 wavelet.