**SHARATH CHANDRA REDDY GADDAM**

**Sharathchandrareddy.gaddam@siu.edu Phone: (469)-343-9644**

**SUMMARY:**

Currently working as a Modem system engineer to perform system level integration and testing for commercializing multiple modem product lines at Qualcomm. Experienced research professional graduated with Masters in Electrical and Computer Engineering at Southern Illinois University, Carbondale.

**EDUCATION**:

**Master’s Thesis in Electrical and Computer Engineering. (**Aug 2019**) GPA: 3.7/4**

**Thesis title: Achievable rate analysis of NOMA-Aided massive MIMO systems** Southern Illinois University, Carbondale, IL

**B. Tech in Electronics and Communication engineering. (**May 2016**) GPA: 3.68/4**

Karunya University, Coimbatore, Tamil Nadu.

**PROFESSIONAL EXPERIENCE**:

**Modem system engineer (Temp) Qualcomm, Sandiego, CA Sept 2019- Present**

* Performed log analysis for an end to end call on various C-V2X features to analyze issues and troubleshoot it.
* Executed health monitor for all C-V2X features to optimize and validate its performance on the MDM/MSM chipset (SA415).
* Implemented WWAN (G+W) concurrency like basic CS and PS call using commercial Anritsu equipment along with to C-V2X testing to understand its impact for C-V2X technology on the MDM/MSM chipset.
* Implemented various LTE features and deployed LTE templates using QCT Octopus Test Base station (TBS) on a Qualcomm MDM and MSM chipset. LTE scenarios executed using TBS are 1CA-4CA, Cell reselection, Inter/intra frequency handover and PCC–SCC swap.
* Implemented a system wide congestion using the Vehicular Congestion Test Rack (VeCTR) using automation framework.
* Executed various stability concurrency scenarios to evaluate the Meantime b/w failure (MTBF) on Qualcomm MDM chipsets.
* Executed DCC congestion runs on VeCTR to evaluate KPI like PER, IPG and ITT for CV2X technology.

**Research Assistant Southern Illinois University, Carbondale, IL Aug 2017-Aug 2019**

* Worked in research area to understand 5G wireless technology using massive MIMO, NOMA and Hybrid beamforming concepts.
* Implemented theoretical system based models to understand the transmission b/w BS and user equipment (UE).
* Generated simulations and theoretical results for 5G system based models using Rayleigh fading channel by considering wireless and probability concepts.
* Utilized Noise interference ratio (SINR) power metrics in Matlab scripting to understand system performance indicators like spectral efficiency, latency and massive connectivity for 5G wireless technology.
* Implemented max-min power control algorithm and convex optimization for analog precoders in research.

**Graduate Assistant Southern Illinois University, Carbondale, IL Jan 2018-May 2019**

* Currently worked as MATLAB graduate assistant in Civil and Environmental Engineering department.
* Worked with MATLAB scripting to extract data for different weather stations and satellite by using Mann Kendall Tests, Singular Value Decomposition analysis and neural networks algorithms.

**Teaching Assistant Southern Illinois University, Carbondale, IL Jan 2017-May 2017**

* Worked as teaching assistant for the courses Computer Method Engineering Technology (ENGR-222) and Software tools for Engineers (ENGR-296).

**Technical Internship Technion Israel Institute of Technology, Haifa, Israel Aug2015-Oct 2015**

* Worked with cadence to create schematics layouts for integrated circuits using DRC and LVS techniques.
* Optimized and evaluated theoretical/practical calculations for Ramp switch capacitor and thermal sensors.
* Implemented RAMP calibrations to generate a smoothed curve using precharge and feedback approach.

**SKILLS:**

Programming/language : Python, Matlab.
Tools/Version control : Github.
Digital Equipment’s : Familiar with power amplifier (PA), Splitters, directional coupler, signal generator, CRO.
Other : Visual Studio, Xilinx, LaTeX.

**ACADEMIC PROJECTS:**

* Analysis and simulation of outage probability, average bit error rate and ergodic capacity for multiantenna systems over small scale fading.
* Validation and performing analysis for 2 basic antenna types to understand its characteristics using impedance measurements and resonant microstrip.

**PUBLICATIONS:**

* Sharath Chandra Reddy Gaddam, D. kudathanthirige and G. Amarasuriya, “Achievable Rate Analysis for NOMA Aided Massive MIMO Uplink’’, Proc. IEEE International Conference on Communications (ICC), May 2019 (accepted).
* Sharath Chandra Reddy Gaddam, D. kudathanthirige and G. Amarasuriya, “Achievable Rate of Massive MIMO NOMA Downlink with Limited RF Chains’’, Proc. IEEE International Conference on Communications (ICC), May 2019 (accepted).

**COURSES:**

 Digital Communications, Advanced Wireless Communications, Signal Detection & Estimation, Principles of Communication Systems and Engineering Data acquisitions