SURYA TEJA PARUCHURI

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EXPERIENCE

Embedded Engineer, Spirent Communications, Eatontown, NJ — May 2018 – Present

- Improved Lognormal fading DSP firmware performance on TMS320C6678 by 2.79X (139 to 389 Million IPS).
- Designing multirate DSP filter banks for rate conversion sub-system in MIMO wireless channel emulators.

Wireless Engineering Intern, Skylark Wireless LLC, Houston, TX — November 2017 – May 2018

- Improved Iris's SFDR by 28.571% (10dB) by implementing self-calibration firmware to mitigate LO Feed Through, DC Offset and IQ impairments of LMS7002M --2X2 MIMO RFIC, using Python SWIG, SoapySDR and C++.
- Implemented a DOCSIS 3.1 to UHF Band Upstream Up conversion using LMS7002EVB and demoed to a client.
- Assisted in Iris software defined radio (SDR) Rx Sensitivity tests by setting up synchronized Iris SDR test-setup.
- Performed Quality Assurance-power sequence tests on 112 Iris-SDRs to characterize inrush current on Iris SDRs.
- Made a Rasberrypi image to remotely power cycle Base Station power boxes (inaccessible after installation).
- Recommended Microsoft Air Band Grant Initiative to raise a capital of $75000.

Voluntary Research Assistant, University of Maryland — December 2016 – May 2017

- Implemented social ties based coalition formation algorithms for Internet of Things (IOT) and self-organizing museum visitors communities formation in MATLAB and verified numerical results against analytical results.
- Co-authored two conference papers presented at ******51st Conference on Information Sciences and Systems and ***12th International Workshop on Semantic and Social Media Adaptation and Personalization.***

Project Assistant, Indian Institute of Science, India — July 2014– May 2015

- Reduced algorithmic complexity and improved QRS detection in ECG through a simple signal processing algorithm, compared to Pan Tompkins and Wavelet based beat classification algorithms in MATLAB.
- Developed Fuzzy Logic based medical diagnosis algorithm- to remotely assess patient's health in MATLAB.
- Co-authored a conference paper presented at ******12th IEEE International Conference on Services Computing.***

SKILLS

- ✓ *Programming languages:* MATLAB, C, C++, Python, Bash, Assembly.
- ✓ *Libraries & API's:* numpy, scipy, Pothosware, SoapySDR, GNU Radio, PyQt5.
- ✓ *Software & Hardware:* CCStudio, Spectrum Analyzers, Network Analyzers, O'scopes, Signal Generators.
- ✓ *Typesetting & Productivity:* Linux, LaTeX, VIM, Git, GDB, SWIG, make, CMake.
- ✓ *Protocols:* LTE, HSPA, UMTS, CDMA, GSM, 802.11, Bluetooth, TCP/IP, OSI, DNS, HTTP, IPv4.

EDUCATION

University of Maryland, College Park, MD.
Master of Science in Telecommunications (*********Academic Excellence Scholarship*, Feb.'17) GPA: 3.83 May 2017
Scholarly Paper: *"Spectrum Efficiency: Using Full Duplex Techniques and Cognitive Radios".*

VIT University, Vellore, India.
Bachelor of Technology in Electronics and Communication Engineering GPA: 8.35/10 May 2014

SELECTED PROJECTS

Multi-Threaded LIFO Buffer API for TI-RTOS, University of Maryland — April 2017

- Mastered multi-threaded programming in a commercial Real-Time Operating System (RTOS) by implementing a multi-threaded LIFO buffer in C for MSP430F5529 microcontroller.
- Synchronization in shared memory (Producer-Consumer model) is achieved through mutex locks.

RTOS Scheduling Simulator, University of Maryland — March 2017

- Mastered discrete event simulation by implementing Real-Time Operating System scheduler simulator for FIFO, Earliest deadline First (EDF) and Rate Monotonic Scheduling (RMS) in C++, using C++ Standard Template Library.

OFDM Tx/Rx chain with Rayleigh fading channel, University of Maryland. — April- 2016

- Modelled a LTE-Release 10 based OFDM transceiver in MATLAB, with Rayleigh fading channel, QPSK & 16QAM modulated pilots and data, cyclic prefix, transmit/receive filters and zero-forcing equalizer.
- Reported on advantages of an OFDM system in a fading cellular channel against complex channel equalization.