SURYA TEJA PARUCHURI

surya@terpmail.umd.edu
240-330-5384
https://stparuchuri.github.io

EXPERIENCE

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

- Improved Lognormal fading DSP firmware performance on TMS320C6678 by 3.94X (389,000 to 101,000 cycles) using processor intrinsics, reducing loop carried bound & Software pipelining (assembly out of order execution).
- Accelerated delivery of Vertex's 4.50 firmware release by verifying statistical properties of fading Signal.
- Implementing phase and bulk delay feature's in firmware for 3GPP Channel Models for Vertex channel emulators.
- Designing multirate DSP filter banks for rate conversion sub-system in wireless channel emulators.

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

- Improved Iris's SFDR by 28.571% (9.52 dBc) 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 for the start-up.

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.
- ✓ *Software & Libraries:* CCStudio, SysBIOS, numpy, Pothosware, SoapySDR, GNU Radio, PyQt5.
- ✓ *Lab Equipment:* 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 — GPA: 3.83 — May 2017
(******Academic Excellence Scholarship***, Feb.'17)
Scholarly Paper: "*Spectral 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

CURRENT OPEN SOURCE INITIATIVES

GNU-Radio

- Implement open source Orthogonal Time Frequency Space (OTFS) module in C++ and Integrate with GNU-Radio.