SURYA TEJA PARUCHURI

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

RELAVANT EXPERIENCE

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

Vertex DSP Design:

- Improved Lognormal fading DSP firmware performance on TMS320C6678 by *x*3.84 (389,000 to 101,000 cycles) using processor intrinsics, reducing loop carried bound and software pipelining (out of order assembly execution).
- Designed, implemented and delivered 3GPP High Speed Train Channel model DSP firmware on TMS320C6678.
- Designed Vertex's dynamic rate-conversion sub-system to support arbitrary scaling of fading Doppler signals to an accuracy of 0.1 Hz using multi-rate filter banks in MATLAB. (Implementation in C++ is in progress).

Live2Lab Ownership:

- Lead a team of 2 Software Developers to deliver 2 major releases of Spirent's Live2Lab product – for 5G NR.
- Implemented new processing engine's routines for 5G NR Over-The-Air MIMO testing of gNodeB in C#.
- Translated product manager's requirements to design specifications, determined project timelines, developed test cases, and documented new feature details in user manual.

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, Institute for Systems Research **College Park MD, 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.***

SKILLS

- ✓ *Programming languages:* MATLAB, C, C++, C#, Python, Bash, Assembly, VHDL, Javascript.
- ✓ *Tools & Libraries:* Vivado, CCStudio, SysBIOS, numpy, SoapySDR, GNU Radio, PyQt5.
- ✓ *Lab Equipment:* Spectrum Analyzers, Network Analyzers, O'scopes, Signal Generators.
- ✓ *Typesetting & Productivity:* LaTeX, VIM, Git, Perfoce, GDB, SWIG, make, CMake, Jenkins, Ant Build.

EDUCATION

University of Maryland, College Park, MD.
Master of Science in Telecommunications GPA: 3.83 May 2017
Awards: Academic Excellence Scholarship, Feb.'17

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

CURRENT OPEN SOURCE INITIATIVES

- Implementing open source Orthogonal Time Frequency Space (OTFS) module in C++ per GNU-Radio module standards.