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I am an electrical engineer with deep interest in Digital Signal Processing and recently graduated with an MS in ECE from Georgia Tech. I am looking for my first full-time job out of college and am available immediately.

**EDUCATION**

**Georgia Institute of Technology,** Atlanta, GA

* Master of Science in Electrical and Computer Engineering *May 2017*
* Bachelor of Science in Electrical Engineering *May 2016*

**SKILLS**

**Programming Languages** C++, MATLAB, Java, Python, C, HTML, CSS, JavaScript, VHDL, Basic Assembly

**Software Packages** MATLAB DSP toolbox, scikit-learn, NumPy, pandas

**Design Software** LTSpice, Mathcad, MATLAB, Quartus II, Multisim, Photoshop, LaTeX, Octave

**Instrumentation** Oscilloscope, Logic Analyzer, Function Generator, Altera DE2, TurtleBot, mbed

**PROJECTS**

**Applications of Digital Signal Processing**

* Implemented a MATLAB function that processes an audio signal of a DTMF dialing sequence and correctly prints out the dialed number. The Goertzel algorithm was used for computing DFTs.
* Modeled a baseband binary communication system with line coding and matched filtering in MATLAB.
* Developed a system in MATLAB that QPSK encodes a text file, converts it to a data stream and decodes the text.
* Implemented an adaptive equalizer in MATLAB that decodes a noise corrupted sequence of QPSK symbols into the corresponding text. The normalized LMS algorithm was used for the equalization.
* Implemented an image compression algorithm based on an image quality estimation technique from Georgia Tech research. MATLAB code was written to split images into patches, filter them, encode them and reverse the process. Achieved 60% (on average) lower bit rates compared to the uncompressed images.

**Intelligent Digital Communications**

Built tools in Python to analyze recorded spectrum data and provide information such as center frequency and bandwidth of the spectrum. These were later released as a part of ‘gr-analysis’ module for GNURadio under a GPLv3 license. Research sponsored by BIT Systems and AT&T.

**Advanced Programming Techniques**

* Developed solutions that used 16 CPUs to compute Fourier transform (FT) of a 2D image using: 1) message passing interface (MPI) and 2) POSIX threads (pThreads). Each CPU computed FT for a certain set of rows, communicated using MPI with other CPUs to compute columns, and to relay the data back to the ‘main’ CPU.
* Developed a program to encrypt and decrypt random messages using 32-bit to 1024-bit RSA, and wrote a program to ‘break’ the 64-bit RSA encryption technique.
* Developed a program that drew a 3D image of a 20-faced Icosahedron using OpenGL. Each face was made a different color and the icosahedron could also rotate about the x and y axes.
* Developed a program that drew the Mandelbrot Set using POSIX threads and OpenGL. The threads were used to compute the set, and OpenGL was used to display the set and implement keyboard/mouse control.
* Built a basic thermostat and .wav file player by programming an mbed microcontroller in C++.

**UAV Tracking**

Developed an algorithm to track a UAV and predict its path. Generated target UAV and a background using MATLAB. Determined the position of the UAV in the background and tracked it using maximum likelihood estimation. Predicted the position of the UAV in future frames based on past data and validated the accuracy of the prediction.

**EXPERIENCE**

**Reliance JIO Infocomm LTD.,** Mumbai, India | Intern, Cloud Team *Jun 2015 – Aug 2015*

Researched an open-source data center inventory management tool, OpenDCIM. Compared its pros and cons with a proprietary solution. Proposed that the company use the proprietary solution based on features and ease of use.

**EXTRACURRICULAR**

**Lead Undergraduate Teaching Assistant** *Aug 2013 – May 2016*

Trained a class of 20 students sequential circuit elements, programmable logic and introductory mechanics. Guided students in designing, building and testing circuits using CAD and VHDL.

**Grand Challenges Living and Learning Community** *Aug 2012 – Dec 2015*

Led a campus-wide “move-out week” event called Tech Treasure with a team of 3. Collected 3 trucks full of items that students had no need for and donated them to Goodwill.