Tyler Coleman

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Skills

Programming Languages
C++, C, Java, Visual Basic, SQL, MATLAB, JavaScript, HTML, CSS5, VHDL, Python

Frameworks and Libraries
React, Node, jQuery, NumPy, SciPy, matplotlib, Selenium, Unity

Hardware and Interfaces
I^2C, SPI, CAN, AD converters, DA converters/PWM, FPGAs

Others
- Programming/debugging of embedded systems
- Electronic circuits design/prototyping
- Real-time signal processing
- Technical/non-technical communications
- Agile methodologies

Education

Tufts University
B.S. Electrical Engineering, cum laude
Aug 2013 – Aug 2017

Coursework
Microprocessor architecture, data structures, DSP, web development, communications systems, linear systems, feedback control systems, computational physics, probabilistic systems analysis

Work Experience

Tata Consultancy Services Sep 2017 – Oct 2018
Software Engineer
- Directed an overseas team of manual testers, coordinating efforts and maintaining regular communications.
- Reduced manual test times by **50%** by automating existing procedures using tools like VB and Selenium.

Autoliv Active Safety May 2016 – Sep 2016
Technical Intern
- Performed bench analysis of failing radar devices to identify root causes of malfunctions. Maintained communications with clients regarding test and fix progress.
- Explored and identified areas for device improvement via a vast analysis of hardware design and cross-team collaboration.

Projects

Digital Guitar Effects Processing
Teensy DSP, embedded C
- Designed and prototyped hardware interface to embed a Teensy DSP into a guitar signal chain.
- Implemented delay, distortion, and filter effects in C, with substantial cost savings when compared to similar dedicated-effect devices on the market.

Interactive Fractal Explorer
C++, SDL graphics library
- Developed a desktop application that allows users to explore a Mandelbrot fractal and customize its appearance with controls for histogram coloring and resolution (for a performance tradeoff).
- Program tracks nearly **500,000** pixels and redraws them as the user zooms and pans.

Automated Cough Counting System
PIC24, embedded C
- Collaborated with Hospital Nacional Dos de May in Peru to develop a device aimed at improving early detection of multi-drug resistant tuberculosis, which affects an estimate **558,000** people annually.
- Audio and accelerometer signals analyzed in real time to identify and record cough data for use in medical research.

Rate My Lunch - rate-my-lunch.firebaseapp.com
React, Redux
- Designed a faux social media where users can post and view others' lunches. Voting system allows users to interact with others' posts, and makes possible feed sorting by various measures ("hot," "new," "top," etc.)
- Integrated React front-end with RESTful back-end to enable data persistence using Firebase.