

Daniel Seabra de Andrade

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Date of Birth	29 th July 1994	Email	hoverstandis@gmail.com
Nationality	American		

Personal Profile

I'm not currently in the job market, but I enjoy both digital and analog aspects of board design. I am currently learning RF and high-speed digital design.

Education

2012-2016 BS in Electrical Engineering - California Institute of Technology (Caltech) [GPA: 3.7]

Recent Employment History

June 2016 Mimosa Networks, 469 El Camino Real, Santa Clara, CA, United States

Present *Hardware Engineer*

Designing and testing hardware for WiFi radio products

Summer 2015 Jet Propulsion Laboratory (NASA), 4800 Oak Grove Drive, Pasadena, CA, United States

Intern

Helped develop a multi-agent framework for executing behaviors on autonomous ships.

School Year California Institute of Technology

2014 - 2016 *Teaching Assistant & Tutor*

Teaching assistant for EE113 (feedback circuit design and introduction to control) and EE/ME 7 (mechatronics); tutor for most intro-level electrical engineering classes at Caltech.

Summer 2014 ShoreTel, 960 Stewart Drive, Sunnyvale, CA, United States

Software Engineering Intern

Worked on a centralized logging system. Processed and correlated logs from various sources (phones, switches, computers, etc.) using Python code and delivered processed information to open source frameworks to monitor data, highlight problems, and deliver alerts.

Technologies: Python, Logstash, Elasticsearch, nginx, TurboGears 2

Summer 2013 ShoreTel, 960 Stewart Drive, Sunnyvale, CA, United States

Software Engineering Intern

Worked on a Python test framework which parsed running C code and automatically wrote C++ test cases.

Technologies: Python, JSON, googletest

Relevant Knowledge

- **Programming Languages**

Python, Java, VHDL, C, C++

Assembly Language: various flavors [x86, NIOS, ARM]

Less experience with: *PHP, JavaScript, HTML, CSS, Haskell*

- **Favorite Topics**

Embedded Systems: embedded programming, FPGAs (digital logic), PCB design

Control: State-space control, PID, estimation (kalman filters, EKF), LQR, optimal control

Programming: Dynamic programming, graph traversal

- **Coursework**

EE 51, EE 52, EE 53 - embedded system design and implementation

EE 44, EE 45, EE 40 - circuits and systems, semiconductor physics

EE 113, CDS 110, CDS 112 - advanced feedback circuits and control system design

EE 111, EE 112, EE 160 - signal processing and some digital filter design, communications

EE 135, EE 125 - power systems, digital circuit design (VHDL)

CS 1, CS 2, U. of I. Courses - basic programming, intro. to algorithms and data structures

Projects

- **Embedded Systems**

FSAE Car - Hardware team lead for Caltech Racing's electric vehicle for the 2016 FSAE competition. In addition to leading the team I was responsible for the core board hardware which processes all the control code as well as reading data from an IMU, a temperature sensor, and writing to a color pixel display. (Ongoing)

Bubbly - 20 MHz bubble measurement device running on an Atmel AT91RM9200 processor. This device detects the edges of an incoming (noisy, variable amplitude) square wave and outputs the void fraction (essentially the duty cycle) and the average high and low voltages to a character display. There were plans to output the incoming signal to a computer through USB but that fell through because embedding USB is nontrivial (actually quite difficult in ARM assembly). All the hardware, software, and PCB design was my own. Finished August 2015.

Automatic Dog Bowl - Dog bowl that opens automatically whenever the correct dog is nearby. The identification is done via IR and detection of the presence of a large object is done through an ultrasonic sensor. Since the project had no processor (all done through hardware), there was no code. Finished June 2015.

DS-94 Digital Oscilloscope - 5 MHz oscilloscope assembled on a custom PCB. I did all the hardware, PCB, and FPGA design. I also wrote the code for interfacing with the hardware, but not the user interface or top-level code. The project was based around an Altera Cyclone III FPGA. Finished June 2014.

RoboTrike - Small robot with holonomic motion. I wrote all the code for this project in x86 assembly. This includes the keypad (4x4 grid of buttons) interface, the serial chip interface, the serial parser, the LED display, and the PWM output to the motors. Finished December 2013.