Daniel Abraham Software/Hardware Engineer

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Education

UC Berkeley - Electrical Engineering and Computer Science - B.S. GPA **3.94**
Expected **December 2021:**

Moorpark College - Electrical Engineering and Computer Science GPA **4.0**
Completed **May 2019**

EE Courses - DSP, Embedded, Analog/Digital Electronics, Convex Optimization, MRI Imaging
CS Courses - Data Structures & Algorithms, Operating Systems, Computer Architecture, Machine Learning

Skills

Software: Python (Numpy, Pytorch), Java, C/C++ (OpenGL/GLUT), x86/RISC-V Assembly

EE/Hardware: DSP - SDRs, Circuit and Board Design, Keysight ADS, SPICE, Sensor and Display Interfacing

Embedded: I2C/SPI/UART, Raspberry Pi, ATMega µControllers, Verilog

Other: Git, Bash, Latex, Oscilloscopes/Function Generators

Work Experience and Research

Apple **Summer 2021**

GPU Emulation Engineer - Intern

- Optimized emulation setup. This involved analyzing existing architectures and using verilog to implement optimizations.

MRI Beat Pilot Tone Research **Spring 2021 - Present**

Student Researcher

- Worked under Professor Miki Lustig and graduate student Suma Anand to improve the Beat Pilot Tone motion compensation setup.
- This work involved using ADF4351 frequency synthesis boards controlled by an Arduino Pro Mini to search for frequency pairs that minimize the received phase noise.
- Testing the device included the use of a Software Defined Radio (SDR) and RF equipment (filters, amplifiers, mixers, etc) to validate the frequency sweep generated by the microcontroller and synthesis boards.

UC Berkeley EECS 16A/B Course Staff **Fall 2020 - Spring 2021**

Teachers Assistant

- Working with a team of TAs, generated homework problem sets and exam problems for students studying circuits, signal processing, introductory machine learning, and control systems
- Ran (2x) weekly discussion sessions where groups of students are lead through interactive course material review and relevant problem sets
- Held (2x) weekly office hours where students are helped personally with course related questions
- Tended to student's course related question on the official course web forum (piazza)

Texas Instruments **Summer 2020**

Test Engineering – Intern

- Using keysight ADS and a network analyzer, modeled a CAT5 ethernet cable as a passive network in order to emulate 100m and 60m CAT 5 cables with similar frequency responses of physical cables.
- All in all, the design incorporated 16 CAT5 emulated cables to improve testing by 2 fold.
- Conducted a presentation to 10 engineers arguing the benefits of the CAT5 emulator design.

Projects

My personal website documents a few of the projects that I have done over the years. Feel free to check them out at the following link: danielabrahamhit.github.io