Andrew Fantino

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Education

University of California, Los Angeles (UCLA)

MS Electrical & Computer Engr. Focus in Circuits & Embedded Systems — Expected June 2024

BS Computer Engr. Concentration in Business Management — June 2023

Coursework — GPA: 3.64

Operating Systems, Computer Security, Network Fundamentals, Algorithms & Complexity

Skills

Programming Languages: C, C++, Python, Verilog
Misc.: 3D printing, I2C, SPI, UART, KiCad, Autodesk Eagle, LTspice

Software: Linux, Git, Jira, Tableau, Solidworks, LaTeX
Hardware: Lab Equipment, Arduino, STM32, ARMv7/v8 SoCs

Work Experience

Viasat Inc. — Carlsbad, CA

Software Engineer Intern — *June 2023 - Sept. 2023*

- Ported custom Linux kernel drivers from 3.8 to 5.4 for embedded software router
- Cross-compiled kernel with OpenWRT and containerized code in LXC container
- Researched API changes in kernel changelogs to discern updates between kernel versions

Software Engineer Intern — *June 2022 - Sept. 2022*

- Researched and evaluated next generation user/kernel-space packet processing solutions, such as DPDK, XDP, and ODP for network encryption modules for a 10x speedup over baseline Linux networking stack
- Deployed layer 3 forwarding code with custom Yocto build system for various ARMv7/v8 SoMs
- Automated test and analysis of packet processing software with Python (NumPy/Matplotlib)

Ocean Aero Inc. — San Diego, CA

Electrical Engineer Intern — *June 2021 - Dec. 2021*

- Architected firmware on ARM v7 MCU for autonomous water sampling project for University of Washington research group for detection of algal blooms in the Pacific Northwest
- Eliminated manual supervision of ultrasonic anemometer test platform by automating UART logging into existing firmware resulting in 4x speedup
- Prototyped power management/distribution system and designed resulting PCB with Autodesk Eagle

Volunteer Experience

IEEE at UCLA — Los Angeles, CA

Project & Lab Manager — *May 2022 - June 2023*

- Spearheaded 'How to be an Officer' workshops to teach new officer technical and leadership skills to new officers
- Managed lectures, parts orders, and specification documents for project leads to ensure smooth experience leading general members

Digital Audio Visualizer Project Lead — *May 2021 - June 2022*

- Taught 7 lectures on SystemVerilog, Digital Signal Processing, and serial communication protocols using Altera FPGA for 50+ students with 98% completion rate
- Designed piano and pipelined calculator projects assignments and updated lesson plans for in-person teaching

Projects

Build Your Own Router | *C, IP Routing* Dec. 2022

- Implemented a software router with ARP functionality and Access Control Lists in C++
- Tested performance and functionality in a Mininet virtual network inside Docker container

Climbing Gym Rating Website | *ReactJS, Firebase, Git, CSS* Mar. 2022

- Built social media platform to rate difficulty and quality of bouldering problems and bookmark favorites
- Used Firesbase Auth and Firestore with custom React hooks to securely store user data and gym info

FPGA Tic-Tac-Toe | *Verilog, VGA Protocol* Dec. 2021

- Architected a 2-player tic-tac-toe game on a Xilinx Spartan6 FPGA with VGA display with Verilog

Digital Audio Visualizer (IEEE) | *SystemVerilog, VGA Protocol, Digital FFT* May. 2021

- Year-long SystemVerilog program with projects on digital design and signal processing, including implementing 16pt FFT for the final digital audio visualizer using an FPGA with VGA output

Busy Signal | *ESP32 WiFi, IoT Devices, Google Calendar API* Jan. 2021

- Designed IoT device mounted on door that reads Google Calendar data to inform if person inside is in meeting

Micromouse (IEEE) | *PCB Design, Embedded C, PID, STM32 MCUs* June 2020

- Collaborated with team to create an autonomous maze solving robot with a self-designed PCB and schematic
- Implemented IR sensor fusion, wheel encoder distance calculation, PID and Flood Fill algorithms in embedded C

Arduino Electrocardiogram | *Arduino C, Laser Cutting, PCB Design* Mar. 2020

- Developed an Arduino powered electrocardiogram using low and high pass filters to isolate frequencies of interest
- Improved portability with OLED display and acrylic enclosure to view heartbeat signal

Blood Alcohol Concentration Measuring Cup | *Arduino C, 3D Printing, Bluetooth* Jan. 2020

- Designed and programmed a weight-measuring cup consisting of an Arduino, a load cell, and basic Android app to track user's BAC
- IDEAHacks Sustainability Award