emwjacobson@gmail.com

EMERSON W JACOBSON

GitHub: emwjacobson
Portfolio: https://emwj.dev/

EDUCATION

University of California, Riverside **3.79 GPA** **Expected June 2023**
Masters of Science, Computer Science

Completed Courses: Parallel Systems; Real-time Embedded Systems; Computer Security;

Expected Courses: Advanced Operating Systems; Advanced Computer Architecture; Software Security; Compiler Construction;

University of California, Riverside **4.00 GPA, Summa Cum Laude** **Received Spring 2022**
Bachelors of Science, Computer Science

Notable Courses: Intermediate Embedded and Real-Time Systems; Operating Systems; Computer Architecture; Intermediate Data Structures and Algorithms; Intro to VLSI;

El Camino College **3.56 GPA** **Fall 2016 - Spring 2020**
Associates of Science, Mathematics

Notable Courses: Differential Equations with Linear Algebra; Advanced C++; Python; Java;

PROJECTS & EXPERIENCE

USB Wifi Switch **Hardware: https://bit.ly/3RxdCCh** **October 2022 - Present**

- Wifi enabled 2-port USB switch that's directly compatible with popular open source monitoring software
- Ports individually controllable with independent voltage and current monitoring
- Simple to assemble, low cost, with modular design

Student Systems Administrator **Dec 2022 - Present**

- Handled user support tickets relating to software and cluster usage
- Provided cluster-wide software installation
- Assisted with deployment of new compute and GPU nodes

ESPHub **Software: https://bit.ly/3fwmQzI** **July 2021 - December 2021**
Hardware: https://bit.ly/3rhdmuZ

- Uses an ESP8266 WiFi enabled microcontroller to record temperature, humidity, and light values
- Uses MQTT to report data back to central server
- Designed & manufactured low-cost PCB containing relevant sensors in a small form factor

ACM Chapter President **August 2017 - August 2020**

- Organized meetings, guest lectures, code competitions, and code camps

RESEARCH

Undergraduate Research **https://bit.ly/3ftyVFU** **July - September 2022**
Dr. Philip Brisk

- Converted CPU implementation of Homomorphic Encryption library to run on datacenter FPGAs using HLS
- Parallelized core calculations of gate bootstrapping
- Identified bottleneck in calculations with continued efforts to increase performance

Undergraduate Research **https://bit.ly/3SQdopn** **January 2021 - June 2022**
Dr. Daniel Wong

- Study the power usage of GPU accelerated embedded systems under various workloads
- Worked with Jetson AGX Xavier and Jetson Nano
- Discovered 12% energy savings in deep learning inference using frequency scaling

TUNE Summer Research Program **July - September 2020**

Dr. Daniel Wong

- 10-week research program
- Developed Continuous Integration workflow with support for Nvidia GPUs

LANGUAGES AND TECHNOLOGIES

Languages: C/C++; Python; Java; Verilog; MySQL; Bash; HTML/CSS/Javascript;
Tools/Frameworks: Linux; Git/GitHub; Vitis HLS; Docker/Swarm; Office Suite;