

CRISTINA MCLAUGHLIN

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EDUCATION

Master of Science in Electrical Engineering

Expected Graduation May 2021

University of Hawaiʻi at Mānoa, Honolulu, HI

Bachelor of Science in Computer Engineering

May 2019

University of Hawaiʻi at Mānoa, Honolulu, HI

WORK EXPERIENCE

Graduate Teaching Assistant

Aug 2020 – Dec 2020

University of Hawaii at Manoa, Department of Electrical Engineering

- Digital Systems and Computer Design: Supervised 165-minute online lab sessions twice a week focused on implementing ARM/LEGv8 assembly programs, SystemVerilog digital circuits, and Xilinx Vivado/FPGA applications
- Developed course material for the transition to online learning—including a Discord server to conduct lab hours, PowerPoints for supplemental information, and videos tutorials explaining projects
- Graded writing intensive technical lab reports with an emphasis on grammar usage and mechanics

Graduate Research Assistant

Aug 2019 – May 2020

University of Hawaii at Manoa, Department of Electrical Engineering

- Ambient Edge: Worked both with faculty advisor and independently to implement distance sensing and interactive lighting Edge services using .NET framework and hardware programming
- Implemented a Unity client that streamed messages from an Azure Kinect body-tracking service over the network and dynamically changed the scene according to the user's physical movements
- Drafted detailed technical documentation on environment setup, hardware setup, project deployment, and service connection

Undergraduate Teaching Assistant

Aug 2018 – Dec 2018

University of Hawaii at Manoa, Department of Electrical Engineering

- Digital Systems and Computer Design: Delivered weekly lectures and conducted in-person lab sessions with a focus on PIC microcontroller program design, simulations, and circuit implementation.
- Worked with Verilog coding, exporting digital circuits to FPGAs, and designing a pipelined processor using HDL
- Supervised student hardware implementation, enforced safety rules, and maintained lab equipment

PROJECTS

Throughput Analysis of Jellyfish Network Variations

A project to analyze throughput of three variations of Jellyfish network topology under different traffic loads

- Constructed random, incremental, and bipartite Jellyfish networks composed of 64, 100, 200, and 300 nodes and degree 8 or 12
- Generated traffic matrices to simulate all-to-all and random permutation traffic loads
- Designed an ECMP routing program to read in topology and traffic matrix, then report the traffic load on each link and maximum load to determine throughput

SKILLS SUMMARY

Programming Languages: C, C++, C#, SystemVerilog, JavaScript, HTML/CSS, Python

Tools/Frameworks: Xilinx Vivado Webpack, Unity, Raspberry Pi, Arduino, .NET, Unity, IntelliJ, Jupyter Notebook

ACTIVITIES

Student Member, UH Manoa Ambient Computing Lab

2017 – Present