Graham MacFarquhar

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EDUCATION

Carnegie Mellon University, Pittsburgh, PA   **May 2022**
Bachelor of Science in Electrical and Computer Engineering

Relevant Coursework

Principles of Imperative Computation	Introduction to Machine Learning	Fundamentals of Electromagnets
Web Application Development	Ecology and Environmental Science	Fundamentals of Semiconductor Development

PROJECTS

Malloc Lab, Introduction to Computer Systems at Carnegie Mellon   **Feb 2020**
General purpose dynamic storage allocator for C programs (C)
- Creatively implemented an allocator that is correct, efficient, and fast.
- Exceeded standards of CPU cycles and memory usage.
- Checked validity of heap to ensure correct implementation.

Multi-Layered Perceptron, Introduction to Machine Learning   **Apr 2022**
PyTorch MLP for classifying Fashion-MNIST dataset (Python)
- Learned to utilize existing PyTorch functions.
- Built a custom MLP with dynamic layer number and size.
- Achieved test accuracy of 94 percent.

Prognosticator-6, ECE Capstone   **May 2022**
Hybrid Duophonic Synthesizer (C++, Python, CAD, FPGA, RPi)
- Implemented analog filters and a large digital feature set.
- Completed an outstanding final product via Agile development.
- Awarded "Best UI".

EMPLOYMENT

CERLAB, Computer Engineering and Robotics Lab at Carnegie Mellon   **Aug 2018 - May 2019**
Research Assistant (Python)
- Collaborated with graduate students in Computer Engineering and Robotics.
- Recorded patient audio using Python on Raspberry Pi.
- Demonstrated prototype and presented data to Philips Representatives.

Teaching Assistant, Introduction to Electrical Engineering   **Aug 2019 - Jan 2020**
Lab instructor

Memory-Lab, Dietrich School of Arts and Science   **Aug 2019 - May 2020**
Research Assistant (Python, HTML5)
- Processed audio files in Audacity with external Python scripts.
- Maintained the Memory-Lab website front-end.
- Organized slack workspace and meetings.

SKILLS

Proficient: C, Java, Python, JavaScript, Git, Django, HTML5, CSS, SolidWorks, English
Knowledgeable: C++, React, JQuery, SQL, AWS, SystemVerilog, AutoCAD, Spanish, Agile development
Familiar: TensorFlow, EAGLE, ROS, Ruby, Angular