Brendan Hu

416-435-8798 | brendanhu18@gmail.com | linkedin.com/in/Brendan-Hu | github.com/BrendanHu

Work Experience

Software Developer Jan. 2023 - Aug. 2023
Intellijoint Surgical *Kitchener, ON*

- Developed models and services in Swift and Objective-C for a product that improves the accuracy of hip replacement surgery, following clean code architecture and the MVVM design pattern.
- Implemented updated screen designs, leveraging the SwiftUI framework for UI and Combine on MacOS for asynchronous operations.

Image Processing / Sensor Characterization Developer Jan. 2022 - Apr. 2022
Teledyne DALSA *Waterloo, ON*

- Implemented bilinear interpolation in MATLAB for a feature (non-integer binning).
- Revised Python test bench to produce EMVA compliant characterization data for newly developed sensors, with extensive use of libraries including NumPy, Matplotlib, and pandas.
- Optimized camera saturation script using an adaptive searching method to decrease run time by 2 hours.

Performance Engineering Sept. 2021 - Dec. 2021
NCR Canada *Waterloo, ON*

- Designed and implemented JMeter scripts to quantify the performance of transaction APIs.
- Drafted documentation for using JMeter with Kubernetes clusters and testing using GCP.

Connectivity Software Testing Jan. 2021 – Apr. 2021
Ford Motor Company of Canada *Oakville, ON*

- Maintained automated network throughput performance tests in Python, using Selenium and Jenkins.
- Reduced variance in throughput speeds for automated test cases by 20%.

Projects

Neural Network Potentials Research Jan 2024 – Present

- Evaluating the use of TorchANI in Python, training a neural network to quickly evaluate potential energy surfaces for molecular dynamics.

LA Times Search Engine Sept. 2023 – Dec. 2023

- Developed a search engine to retrieve information from an archive of the LA Times, using Python and implementing BM25 as the search algorithm.

UWAFT EcoCAR Design Team: Connected Software Sept. 2019 – Sept. 2023

- Configured a NVIDIA Jetson (running on Linux) to test Python scripts, and for subsequent communication between the CAN tank and HMI.

Pathfinding Visualizer Oct. 2019 – Feb. 2020

- Developed a version of the A* search algorithm in Python to find the best path between two points.

Education

University of Waterloo Waterloo, ON
Bachelor of Applied Science, Nanotechnology Engineering *Sept. 2019 – Apr. 2024*

- Relevant courses: Systems Programming and Concurrency (C), Data Structures and Algorithms (C++), Programming for Performance (Rust, C++/CUDA)