Ryan Quan

University of Waterloo
3B Mechatronics Engineering

linkedin.com/in/ryan-quan8 | rnquan.github.io | (604) 753-8334 | r4quan@uwaterloo.ca

Summary of Qualifications

- Technical skills include machine learning algorithms, software development, mechanical design, technical documentation, and robot development
- Robotics control experience learned through university (kinematics, dynamics, and embedded programming) and side projects
- Experience using and developing machine learning algorithms in real-world applications through research positions and co-ops
- Software development experience gained throughout high school and university (Python, Java, C++)

Education

Candidate for Bachelors of Applied Science | University of Waterloo | Waterloo, ON | Sept. 2019 – April 2024

Relevant Experience

Junior Backend Software Engineer | Pronti AI | Kitchener, ON | Sept. 2022 –Dec. 2022

- Developed a colour mapper in Python to find a chosen color's closest neighbour in a given colour set, removing redundant colours and improving user experience by reducing visual clutter
- Implemented a content filter in Python to verify uploaded images did not violate terms of service, enhancing app security
- Created an exporting app in Python to fetch data from Mixpanel and Quickbooks API endpoints based on a selected date, reducing administrative delay by 60% while adhering to OAuth2 requirements and principles
- Deployed an open-source localization platform using Docker and Google Cloud Platform to aid in internationalization of apps
- Added a feedback system in Javascript to scrape an authorized user's inbox for relevant emails and parse the data into a Google Sheet**,** allowing for quicker identification of user-reported bugs

Data Analyst Assistant | Shenzhen Lansi Institute of AI in Medicine | Shenzhen, China | Jan. 2022 – April 2022

- Analyzed data and generated a predictive model for prognostic gene signatures and Tumour Mutational Burden (TMB) using machine learning algorithms (LASSO regression, univariate and multivariate COX regression analyses) in R and Perl resulting in creation of a gene signature for hepatocellular carcinoma
- Developed a k-nearest neighbours algorithm in R to clean 24000 data entries from the International Cancer Genome Consortium for analysis
- Published this research in the journal "Frontiers in Immunology" under the title "Construction of a lipid metabolism-related risk model for hepatocellular carcinoma by single cell and machine learning analysis"

Research Assistant | Research Apprenticeship, Dr. XiaoYu Wu | Waterloo, ON | Jan. 2021 – Dec. 2021

- Helped construct a Markov Chain Monte Carlo energy consumption model in VBA and Python simulating activity and heating loads for 1,000 consumers over 8,760 hours (one year), presenting findings and model at the International Green Energy Conference in July 2021
- Significantly improved the accuracy of the per-day simulation to within 5% of verified values
- Currently working on publishing a paper in the International Journal of Green Energy on this research

Additional Activities

Search and Rescue Robot (C++) | January 2023

- Designed and built a search and rescue robot capable of traversing a simulated mountain range and locating a simulated base location
- Created searching algorithm as well as implemented sensor and actuator interfacing and control code (C++)

Skittle Sorter (C++) | September 2019

- Constructed a sorting machine with computer vision systems that performed with 100% accuracy
- Developed a sorting algorithm for skittles/pills, as well as the skittle transportation mechanism