

EDUCATION

University of British Columbia
BASc, Engineering Physics

Vancouver, BC
2019 – 2024

INDUSTRY EXPERIENCE

Kardium

Fall 2022

Software Systems Engineer

- Re-architected object-oriented software infrastructure for processing ensembles of heart catheter data. Introduced performance improvements throughout the code by addressing inefficiencies in Matlab's tensor indexing.
- Developed an application for heartbeat signal labeling, utilizing moving average filters for automatic spike detection. Collaborated on using Gaussian processes for improved predictive modeling of heartbeat time series.

Motion Metrics

Summer 2022

Software Engineer

- Developed and deployed an application to centralize company records management, prioritizing continuous deployment by creating a comprehensive suite of 288 unit tests to enable future improvements. Built with React, Express, and MySQL, the system is still in use, supporting product development tracking for engineers.

Cascadia Carbon

Spring 2021

Software Engineer

- Contributed to iOS application in Swift, refactoring key classes and implementing location-enabled features.
- Developed 2nd iteration of company website, increasing average time on site by 30% in the month after launch.

RESEARCH EXPERIENCE

UBC Robotics and Control Lab

Summer 2023

Machine Learning Researcher, Supervisor: Dr. Purang Abolmaesumi

- Pre-trained novel transformer architecture using medical reports with distinct embeddings for numerical and categorical features for ultrasound data processing and representation learning in cardiology. [Details](#).
- Brought up a scalable AWS application to deploy the model, enabling real-time physician interaction. [Source](#).

UBC Engineering Physics Project Lab

Engineer, Supervisor: Miti Isbasescu

Sep 2022 - Apr 2024

- Developed a self-resetting real-world reinforcement learning control system for ball-on-wheel balancing. [Demo](#).
- Automated a training pipeline in ROS+Gazebo for sim2real transfer and implemented RL algorithms like PPO.

UBC Quantum Devices Group

Summer 2020

Physics Researcher, Supervisor: Dr. Joshua Folk

- Designed a low-noise amplifier PCB to detect electron tunneling. Wrote SPICE models to simulate gain and stability at cryogenic temperatures. Used Python scripts to comprehensively test performance. [Details](#).

PROJECTS

Conditional Generative CNN for Zero-Shot Image Classification

Spring 2024

- Trained a PyTorch CNN architecture with class embeddings, enabling conditional image generation. [Report](#).
- Applied the CNN model to zero-shot image classification using Bayes theorem, obtaining 80% testing accuracy.

Simulated Autonomous Driving Competition

Fall 2021

- Developed a self-driving vehicle controller with ROS in simulated Gazebo environment. Trained CNN using TensorFlow to interpret license plates, achieving 95% testing accuracy. [Report](#).