David Yuchen Wang

4th Year UBC Engineering Physics Student
david311@student.ubc.ca | davidw0311.github.io | (250) 797- 4234

WORK EXPERIENCE

Junior Machine Learning Engineer
TRIUMF Particle Accelerator Centre
May. 2021 – present

Applied reinforcement learning methods for tuning of particle accelerators.

- Established the first AI-driven interface for accelerator tuning at TRIUMF.
- Investigated state-of-the-art policy gradient methods using PyTorch.
- Developed custom training architectures using Python, with emphasis on modularization and extensibility.
- Authored paper for poster and video presentation at 2021 NeurIPS Workshop for Machine Learning and the Physical Sciences.

AI Research Intern
Huawei Vancouver
Jan. 2020 – Apr. 2020

Investigated methods for optimizing deep learning models.

- Preprocessed large data-sets with custom Python and Bash scripts for use in object detection and classification research.
- Explored frameworks using TensorFlow and PyTorch to incorporate multi-GPU training compatibility for Huawei AI architectures.
- Configured custom environments on the cloud using Docker to provide the research team with improved access to GPU resources.

EDUCATION

The University of British Columbia
(Presidential Scholars Award Recipient)
Engineering Physics, BASc – 86% average

SKILLS

Python, Java, C/C++, Bash, MATLAB
GIT, Linux, OpenCV, PyTorch, NumPy,
TensorFlow, Scikit-Learn, Docker

TECHNICAL PROJECTS

Navigation Systems Team Lead
UBC AgroBot Design Team
Sep. 2019 – present

Led a sub-team of 10 students to develop a navigation system for an agricultural robot.

- Used computer vision algorithms in OpenCV for processing video streams to implement self-driving using PID control.
- Integrated live data from IMU and depth sensors to develop smooth robot driving.
- Developed simulations of robot and crop field using ROS and Gazebo to test the controller.
- Coached members, organized meetings, and coordinated tasks to meet team deadlines.
- Wrote object oriented code in Python and collaborated with the team over GitLab.

Robot Navigation and License Plate Recognition
UBC ENPH 353 Project Course
Sep. 2020 – Dec. 2020
Teaching assistant Sep. 2021 – present

Developed AI for a simulated, self-driving robot able to perform license plate detection.

- Used computer vision to navigate intersections while achieving zero collision of moving pedestrians and vehicles.
- Generated custom datasets and trained multi-layer perceptron models to successfully classify license plate characters.
- Oversaw labs as a teaching assistant for a class of 3rd year students and provided guidance in troubleshooting and debugging.

OTHER EXPERIENCE

- UBC Formula Electric team member – PCB design for competition vehicle (2018-19)
- Dover Bay Eco Club president (2016-18)
- Dover Bay Musical Theatre lead piano (2015-18)

HOBBIES

Robotics | Piano | Hiking | Photography