

David Yuchen Wang

4th Year UBC Engineering Physics Student
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WORK EXPERIENCE

Junior Machine Learning Engineer

TRIUMF Particle Accelerator Centre

May. 2021 – Jan. 2022

- Established the first AI-driven interface for accelerator tuning at TRIUMF.
- Investigated state-of-the-art policy gradient reinforcement learning methods in PyTorch.
- Developed software architectures and GUIs using Python, for training agents and integration with physical beamline controls.
- Authored paper “Accelerator Tuning with Deep Reinforcement Learning” at the 2021 NeurIPS Workshop for Machine Learning and the Physical Sciences.

AI Research Intern

Huawei Vancouver

Jan. 2020 – Apr. 2020

- 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++, C#, Bash, MATLAB,
ROS, GIT, Linux, OpenCV, PyTorch, NumPy,
TensorFlow, Scikit-Learn, Docker,
Solidworks, Altium Designer, FPGA

HOBBIES

Cooking | Piano | Hiking | Photography

TECHNICAL PROJECTS

Navigation Systems Team Lead

UBC AgroBot Design Team

Sep. 2019 – present

- Implemented self-driving using PID control with data from IMU, lidar, and depth sensors for an autonomous agricultural robot.
- Used computer vision algorithms in OpenCV to process video on a Nvidia Jetson board.
- Built custom robotic simulations using ROS and Gazebo with AWS Robomaker to test controller and algorithms.
- Organized, coached, and led a sub-team of 10 members to meet team deadlines.

Bioprinter Robot Interface Capstone Project

Aspect Biosystems / UBC ENPH 453 course

Sep. 2020 – present

- Designing a full-scale robotic system for transportation of bio-printed tissue.
- Performing rapid prototyping using CAD, 3D-printing, and machining to determine optimal designs for a robotic end-effector.
- Building GUI and software controller using C# to control system with 3 axes of motion.

Robot Navigation and Plate Recognition

UBC ENPH 353 Project Course

Sep. 2020 – Dec. 2020

Teaching assistant Sep. 2021 – present

- Used computer vision to detect license plates and 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)
- UBC PHAS 40 hour machine shop course (2019)