David Yuchen Wang

5th Year UBC Engineering Physics Student
david311@student.ubc.ca | davidw0311.github.io | (250) 797- 4234

WORK EXPERIENCE

Machine Learning Engineer
Yakoa – Web3 Startup
May. 2022 – Sep. 2022

- Explored state of the art self-supervised learning, object detection, and image segmentation techniques for use in detection of fraudulent NFTs.
- Implemented and deployed those models using PyTorch in AWS-EC2 instances.
- Statistically analyzed model loss functions to determine ideal hyperparameters, which helped improve overall model performance.
- Drafted the design for company website using Figma.

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 to train and deploy RL agent.
- Collaborated with operators to integrate the agent with real-world accelerator controls.
- Wrote and published paper *Accelerator Tuning with Deep Reinforcement Learning* at NeurIPS 2021 workshop.

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.

TECHNICAL PROJECTS

Captain / Navigation Sub-team Lead
UBC AgroBot Design Team
Sep. 2022 – present / Sep.2019 – Sep. 2022

- 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 a team of 50 students across 4 sub-teams and initiated the first successful field test at UBC Farms.

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

- Used ROS to operate an autonomous vehicle and utilized computer vision to navigate and avoid moving obstacles within simulated world.
- 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.

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