Alan Yuan

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Work Experience

Amazon Jun 2023 – Aug 2023
Software Developer - Intern *Toronto, Ontario*

- In progress

PAIR Lab Sep 2021 – Present
Researcher *Toronto, Ontario*

- Built on top of **NVIDIA**'s Isaacsim to create a robot reinforcment learning **framework**
- Utilized state-of-the-art SEA algorithm to solve **long-horizon robotics tasks**
- Creating robot learning environments and using PPO to create **reinforcment learning** benchmarks

Amazon May 2022 – Aug 2022
Software Developer - Intern *Vancouver, British Columbia*

- Engineered a modular microservice in **Java** to send notifications to customer of cashback on select products
- Utilize **AWS** webservices such as **Lambda**, **SQS** and **SNS** to ensure scalability of the notification system

Intel May 2021 – May 2022
Software Engineer - Intern *Toronto, Ontario*

- Developed support software to generate 4000+ of completely random test-cases for edge-case testing
- Optimized support tool's Ram templates to reduce false positives and failing cases by around **70%**

Centivizer Apr 2020 - Sep 2020
Software Developer - Part-time *Toronto, Ontario*

- Designed and wrote backend application using **Node.JS** and **SimplePeer** to connect users via video call

Education

University of Toronto — cGPA
MScAC *Sept 2023 - Jan 2025*

University of Toronto 3.84 cGPA
HBSc Computer Science Specialist, Major in Mathematics *Sep. 2018 – May 2023*

Publications

J. L. Yuan, Z. Zhou, K. Darvish, X. Zhou, A. Mandlekar, A. Garg. Multi-Stage Structured Task Learning Using Semantics with SEA-RL, *CoRL 2023*

M. Mittal, C. Yu, Q. Yu, J. Liu, N. Rudin, D. Hoeller, **J. L. Yuan**, R. Singh, Y. Guo, H. Mazhar, A. U. Mandlekar, B. Babich, G. State, M. Hutter, A. Garg. ORBIT: A Unified Simulation Framework for Interactive Robot Learning Environments, *IEEE Robotics and Automation Letters (RA-L) 2023*

Projects

Deep QLearning Snake | Link: GitHub May 2021 – Dec 2021

- Utilized **PyTorch** to write a Deep Q-Learning snake agent reaching a high score of **40** after **5** minutes of training

CaNetDa: Deep Learning for GeoGuesser in Canada | Link: GitHub Jan 2021 – Apr 2021

- Mined dataset and trained an ensemble of **ResNet**, **EfficientNet** and **Vision Transformer**.
- With our approach, a accuracy of **60%** was consistently achieved out of 13 options

Machine Learning Course Competition | Link: GitHub Sep 2020 – Dec 2020

- Achieved the 5th highest score in the unsupervised movie recommendation competition.
- Improved on the SGD training process by adding weight regularization and biases based on reseach papers

Tron UDP Multiplayer | Link: GitHub Sep 2019 – Dec 2019

- Created a four player game for local networks using the **UDP** network protocol and C++
- Utilize **epoll** for both client and server to monitor the socket as well as the timer (server) and stdin (client)

BF-Interpreter | Link: GitHub Mar 2018 – Nov 2018

- Built **interpreter** that runs BF in C
- Includes a BF shell and runs all example BF programs found on Wikipedia

Technical Skills

Languages: Python, C/C++, JavaScript, Java, C#
Tools: Git, React Native, Node.js, MongoDB, SQL (Postgres), PyTorch, Numpy, GDB, GraphQL