

Alan Yuan

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in /JaLnYn

/JaLnYn

Experience

Software Engineer - PEY Intern | Intel

C++, Python, Bash

Summer 2021 - present

- > Python and Bash scripts to automate mass code changes and testing.
- > Worked with program that generates Verilog which is used to test correctness of compilers.

Software Developer | Centivizer

Node.JS: SimplePeer, Socket.io, Axios

Summer 2020 - Fall 2021

- > Designed and built server that connects "friends" to a video call with NodeJS and SimplePeer
- > Used Socket.io to communicate between the client and backend.
- > Connected the server with the database through a RESTful API using the Axios library.

Education

University of Toronto

Sep, 2018 – Jan, 2023

Candidate for Honours B.S. in Computer Science

cGPA: 3.83/4.0

Relevant Coursework: Introduction to M.L (95), Data Structures and Algorithms (92), Operating Systems (91), Parallel Programming (94), NNs and Deep Learning (96), Intro to AI (97)

Skills

Languages C/C++, Java, Python, C#, JavaScript

Tools PyTorch, numpy, Firebase, MongoDB, MySQL, SFML, Node.JS, React.JS, React Native

Side Projects

Counterfactual Regret algorithm (to play Kuhn poker and Tic-tac-toe)

Python, PyTorch

May, 2021-Present

github.com/JaLnYn/pokerbot

- > Read articles and papers to understand **CFR, CFR+ and MCCFR**.
- > Implemented a Q-learning snake on Kuhn poker, and tic-tac-toe.

Q-learning M.L algorithm (to play Snake)

Python, PyTorch

Dec, 2020-Jan, 2021

github.com/JaLnYn/mlsnake

- > Read articles and papers to understand **Q-Learning**
- > Implemented a Q-learning snake on top of a existing implementation of the snake-game.

CSC311 (Intro to M.L) Course Competition

Python, numpy

Nov, 2020-Dec, 2021

- > Achieved the **5th highest score** in the competition and a 99% on the project write-up.
- > Chose and implemented a Matrix Factorization algorithm to recommend a selection of movies to users.
- > Improved on the SGD training process by adding weight regularization and biases based on paper on a different application.
- > Used ensembles to decrease variance ensuring the private score will be similar to that of the validation set.

Merchant Sensei Scraper

Dec, 2019-present

Python: boto3, bs4
merchantsensei.com

- › Created **script to scrape the web** for HTMLs and other useful information to be run on EC2s.
- › Using Python's threading capabilities, gave script ability to scale with CPU power
- › Automated the packaging of the extracted data
- › Sends ZIP files to AWS bucket in a nice ZIP file to minimize storage costs

Tron UDP multiplayer

Sep, 2019-Dec, 2019

C++, ncurses
github.com/JaLnYn/Tron

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

Evolutionary M.L algorithm (to play Snake)

Mar, 2018-Apr, 2018

C++
github.com/JaLnYn/Machine-learning-Snake

- › Read articles and papers to understand and implement the N.E.A.T Evolutionary algorithm with raw C++.
- › Tested multiple fitness metrics such as score, survival time, and time between scoring.