Julia L. Wang

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Education

University of Toronto **Expected: May 2024**

BASc in Engineering Science, Major in Machine Intelligence, Minor in Engineering Business

- Major GPA: 3.8 | Relevant Courses: Software Engineering, Artificial Intelligence, Machine Learning, Algorithms
- Recipient of the Jeffrey Skoll Scholarship, Dean's Merit Award, Prof. Cohen Scholarship, and Pesando Scholarship

Technical Skills

Languages: Python, C++, C, SQL, Verilog, JavaScript, HTML/CSS, MATLAB, R, Flutter, ARM Assembly
Technologies: Object-Oriented Programming, Git, PyTorch, Pandas, TensorFlow, React.js, Flask, Arduino

Experience

Software Engineer Intern **May 2022 - May 2023**

Intel *San Jose, CA, USA*

- Agile full-stack development in **C++** for Quartus Prime FPGA design software's Signal Tap logic analyzer.
- Engineered clock tracing APIs for **Verilog** designs, achieving a 10s acceleration for designs with 60,000+ elements.
- Automated signal matching with a wave simulator and black-box creation for encrypted IPs during synthesis.
- Implemented user-facing GUI features from direct client requests, resulting in a 2x increase in efficiency.
- Hosted weekly events for 25+ interns and discussed ethical AI as a speaker at the 2022 AI Global Impact Festival.

Data Engineer Intern **Jan. 2021 - Jun. 2021**

Dataraction Inc. *Toronto, ON, Canada*

- Utilized **PostgreSQL** to create a business intelligence interface providing insight into user profiles and behaviour.
- Implemented a robust AI chatbot and incorporated user prediction analysis features using **IBM Watson**.

Software Developer Intern **Sep. 2020 - Dec. 2020**

Dataraction Inc. *Toronto, ON, Canada*

- Front-end mobile development in **Flutter**, ensuring a seamless and visually captivating user experience.
- Integrated RESTful APIs to facilitate real-time data synchronization and dynamic content updates.

Research & Projects

Undergraduate Thesis on Financial Data Privacy **Sep. 2023 - Present**

- Partnered with RBC to research **GAN**s and **auto-encoders** for privacy-preserving synthetic data generation.

Covalent Reactivity of Serine Active Sites | *3D CNN, XGBoost, Python* **Sep. 2023 - Present**

- Researching **XGBoost, 3DCNN**, and **Deep CNNs**, for classification of reactivity in protein structures for TCI.

Events Hub Web Application | GitHub | *React, Flask, PostgreSQL, CSS* **Sep. 2023 - Nov 2023**

- Developed and deployed an events hub web application using **React, Flask**, PostgreSQL, and CSS, implementing a robust CI/CD flow and automated unit, regression, and load testing for seamless deployment and reliability.

Retail Product Recommender | GitHub | *sBERT, GCN, Python, PyTorch, Pandas* **Jan. 2023**

- Developed a **Python**-based recommender system using **sBERT** for semantic encoding and Graph Convolutional Network (**GCN**), utilizing edge weights to output embeddings predicting item-user similarity.

Fairness in Predicting Recidivism | GitHub | *NAS, RNN, RL, Python, PyTorch, NumPy* **Oct. 2022**

- Implemented a prediction model in **Python** using Neural Architecture Search (**NAS**) with a reinforcement learning (**RL**) trained controller network for hyperparameter tuning and Recurrent Neural Network (**RNN**).
- Accomplished a 3.5x improvement in counterfactual fairness metrics while increasing accuracy by 2%.

RL Agents for Pokémon Battling | GitHub | *RL, DQN, Python, Keras* **Mar. 2022 - Apr. 2022**

- Created Reinforcement Learning (**RL**) agents trained with a Deep Q-Network (**DQN**) using Keras in **Python**.
- Experimented on greedy Q-policy selection, policy hyperparameter tuning, and the selection of training agents.

DotsLogistics Solutions | GitHub | *React, CSS, Python* **Jan. 2021 - Apr. 2021**

- Led a team to win 2nd place in the 2021 Agorize AI for Future Business Competition, surpassing 302 competitors.
- Developed a prototype site using **React.js** and and implemented a Graph Neural Network (**GNN**) in **Python**.