Rongqi(Richard) Fan

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SUMMARY

• 3rd-year Computer Science student with 4+ years of programming experience.
• Interested in all aspects of the technology industry with a focus on **Artificial Intelligence** and its applications.
• Solid computer science and mathematical background. Experienced in both front-end and back-end and all stages of software engineering.
• Seeking **2023 Winter and Summer** internship positions to leverage my skills and experience to implement robust software products.

EDUCATION

Bachelor of Computer Science
University of Waterloo • Waterloo, ON, 2020-2025

SKILLS

Technologies: Django, Flask, Vue.js, Android Studio, Tensorflow, Numpy, Pandas, Jupyter Notebook, Linux, Git.

Languages: C, C++, Python, Java, JavaScript, HTML, CSS, SQL, Racket, R, YANG, Bash.

COURSEWORK

Operating Systems, Data Structures, Algorithms, Compiler, Database, Object-Oriented Programming, Linear Algebra, Multi-Variable Calculus, Functional Programming, Probability, Statistics, Optimization, C++ Design Patterns, Smart Pointers.

EXPERIENCE

Software Engineer Intern
Huawei Technologies   **May 2022 - August 2022, Markham, ON**
• Designed the interfaces of a computer network **configuration management software** that allows fast CRUD operations (~20 times faster than that of the competing product).
• Refactored all unit tests with C++ templates, and vectors following **object-oriented programming** principles and YANG standards.
• Multi-OS support (Linux, windows, and qemu).

PROJECTS

AlphaZero - Gomoku
September 2021 - December 2021

• Implemented a modified version of **AlphaZero** (an AI algorithm used to train board game players solely based on self-play) for Gomoku.
• Achieved competitive performance after ~2 hrs of training using **Tensorflow** on a laptop.
• Created a user interface using **Vue.js** with **Flask** as the backend (REST API).
• Employed reinforcement learning principles with **Monte Carlo Tree Search** as a policy improver.

Machine Learning
September 2021 - January 2022

• Implemented basic linear models such as logistic regression and linear regression with gradient descent using **Numpy**, and **Tensorflow**.
• Trained various of **Convolution Neural Networks** with different architectures (variations of **VGG-16**) to test the effect of dropout.
• Achieved state-of-art **90%+ accuracy** on **cifar-10** with less than 1 hr of training using TensorFlow on a laptop.
• Implemented tree-based machine learning algorithms **Random Forest** and **Gradient Boosting Tree** in Python using Numpy.

Personal Website
September 2021 - October 2021

• Developed a website displaying personal projects, and blogs using HTML, CSS, JavaScript, and **Django**.
• Multi-language Support.
• Used default **SQLite** database through Django models.

AWARDS

Old Boy's Medal in Mathematics
St. Andrew's College (High School) • 2020
Awarded to the **Top Math Student** of the Graduating Class. Highest average in senior year math courses: AP Calculus, and Statistics.