Rongqi(Richard) Fan

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EDUCATION

BSc. Honours Computer Science Waterloo, ON | Sep 2020 - May 2025 (Expected)
University of Waterloo
Teaching Assistant; Presidents' Scholarship with Distinction; Dean's Honours List; Computer Science Club; Go Club
Coursework: Computer Vision; Machine Learning; Probability; Algorithms; Operating Systems; Database; Compiler

SKILLS

Languages: Python, C++, C, Java, Racket, Bash, JavaScript, SQL, R, HTML, CSS
Technology: Tensorflow, PyTorch, Numpy, Scikit-Learn, Pandas, Keras, Git, Django, Flask, Vue.js, Linux, Android Studio

WORK EXPERIENCE

TUSIMPLE | Incoming Multi Sensor Perception Research Intern San Diego, CA | Jan 2023 - Aug 2023

- Will work on Camera-based depth estimation and 3D detection in challenging real-world scenarios

UWATERLOO COMPUTER SCIENCE CLUB | CodeyBot Developer Waterloo, ON | Jan 2023 - present

- Will contribute to the development of CodeyBot on discord using TypeScript

WATONOMOUS | Software Developer Waterloo, ON | Jan 2023 - present

- Will contribute to the development of self-driving cars as a software team member

HUAWEI TECHNOLOGIES CANADA | Software Engineer Intern Markham, ON | May 2022 - Aug 2022

- Worked on configuration management software for computer network devices, facilitating data management
- Designed an user interface **reducing** processing time by **90%+** for CRUD operations
- Refactored all unit tests following **object-oriented programming** principles; Wrote Bash Scripts to automate testing

PROJECTS

ALPHAZERO - GOMOKU Tensorflow, Python, CNN, Numpy, Vue.js, Flask

- Implemented **AlphaZero** (an AI algorithm training board game players solely from self-play) for Gomoku
- Created an UI in **Vue.js** with **Flask** backend (REST API), displaying real-time winning probability predicted by the model
- Improved search space exploration through random sampling with **Monte Carlo Tree Search** as policy improver

MACHINE LEARNING Tensorflow, Python, CNN, Numpy, Scikit-Learn

- Wrote a library for traditional ML algorithms and applied **Deep Learning** methods for **Computer Vision** problems
- Implemented linear models logistic regression and linear regression with gradient descent using Numpy
- Implemented tree-based ML algorithms **Random Forest** and **Gradient Boosting Tree** in Python using Numpy
- Desgined and trained **Convolution Neural Networks** with different architectures
- Achieved state-of-art **90%+** accuracy on CIFAR-10; Reduced overfitting by **80% +** using dropout, L-2 regularization

AWARDS

THE 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