Rongqi(Richard) Fan

frqrichard@gmail.com | 1-226-881-2166| linkedIn/richard-fan2020/ | github/Richard5678 | richardfan.herokuapp.com

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; Linear Algebra; Probability; Optimization; Data Structures and Algorithms; Operating Systems; Statistics; Multi-Variable Calculus; Database; Compiler; Functional Programming

SKILLS

Languages: Python, C++, C, Java, Racket, Bash, JavaScript, SQL, R, HTML, CSS
Technology: Tensorflow, PyTorch, Numpy, Scikit-Learn, Pandas, Git, Jupyter Notebook, Django, Flask, Vue.js, Linux, LaTeX, 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
- Contribute to perception system on Level 4 autonomous driving trucks
- Research and develop **Deep Learning** solutions for multi-sensor perception problem, including LiDAR, RADAR, camera

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

- Worked on configuration management software for computer network devices to facilitate data management.
- Designed the user interface, **reduced** processing time by **90%+** for CRUD operations
- Refactored all unit tests following **object-oriented programming** principles, improved readability and maintainability
- Discovered and fixed serialization problems on inheritance relationship
- Contributed to cross-platform support, increased reachability of the software (Linux, Windows, and QEMU)

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
- Achieved competitive human-level performance after 2 hours of local training in Tensorflow
- 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
- Trained **Convolution Neural Networks** with different architectures (variations of VGG-16)
- Achieved state-of-art **90%+** accuracy on CIFAR-10; Reduced overfitting by **80% +** by 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