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 math background. Experienced in front-end, back-end and all stages of software engineering.
• Seeking **2023 internship** positions to leverage my skills and experience implementing robust software products.

EDUCATION

Bachelor of Computer Science **2020 - 2025, Waterloo, ON**
University of Waterloo • Computer Science Club, Go Club • President's Scholarship with Distinction • **Major GPA: 3.9/4.0**

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

Computer Vision, Machine Learning , Operating Systems, Data Structures, Algorithms, Compiler, Database, Object-Oriented Programming, Linear Algebra, Multi-Variable Calculus, Functional Programming, Probability, Statistics, Optimization.

EXPERIENCE

Incoming Research Engineering Intern – Multi Sensor Perception
TuSimple Inc. **Jan 2023 - August 2023, San Diego, CA**
• 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**, etc.

Software Engineer Intern
Huawei Technologies **May 2022 - August 2022, Markham, ON**
• Designed the interface of **configuration management** software, **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 inherence relationship, improved **interpretability** by updating **hash functions**.
• Contributed to **cross-platform support**, increased **reachability** and **availability** of the system (Linux, Windows, and QEMU).

PROJECTS

AlphaZero - Gomoku
September 2021 - December 2021
• Implemented a new version of **AlphaZero** (an AI algorithm training board game players solely based on self-play) for Gomoku.
• Achieved **competitive human-level performance** after 2 hours of local training in **Tensorflow**.
• Created a 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
September 2021 - January 2022
• 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** and **Tensorflow**.
• Implemented tree-based machine learning algorithms **Random Forest** and **Gradient Boosting Tree** in Python using **Numpy**.
• Trained **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 hour** of local training on **TensorFlow**.

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 AP Statistics.