Xiaomeng (Vivian) Lei

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EDUCATION

University of Waterloo, Waterloo, Canada — Sep 2021 - Aug 2023
Master's Degree in Electrical and Computer Engineering (Specialization: Computer Software)

Jilin University, Changchun, China — Sep 2016 -Jun 2020
Bachelor's Degree in Engineering

SKILLS

- **Languages**: Python (advanced), SQL, C++ (advanced), JavaScript, TypeScript, HTML5, CSS3, Java
- **Frameworks**: Flask, React, Node.js, Django
- **Developer Tools**: TensorFlow/Pytorch, Scikit-Learn, Huggingface, Git, AWS, Docker, Relational Databases, Linux

WORK EXPERIENCES

Software Developer Intern (Remote) — Dec 2022 - Jun 2023
Whaler Technologies Inc., Alberta, Canada

- Contributed to the development of a Web3-based food delivery platform for Android, iOS, and web using **Node.js**, **Django**, and **React**.
- Independently designed and developed a user-centric food preference page for the app using **React Native**. This included creating a dynamic scrollview for food options, an interactive options component, and a save button, all integrated with useState for real-time preference tracking and updates.
- Engineered robust backend solutions, including **API** endpoints for managing user preferences.
- Devised user-friendly features and meticulous error handling, including pre-selecting user preferences, updating preferences via POST requests, and providing immediate feedback through toast messages.

Graduate Teaching Assistant (Contract Part-time) — Sep 2022 - Apr 2023
University of Waterloo, Waterloo, Canada

- Assisted in Algorithm Design and Analysis, and Operating Systems courses.
- Led labs on developing a real-time operating system for an MCB Board using **C**.
- Developed **Python** and C scripts for **automated testing**, grading, and plagiarism detection, successfully reducing weekly grading time from 6 hours to 2 hours.

PUBLICATION

- Lei, Xiaomeng, and Mahesh Tripunitara. "The Hardness of Learning Access Control Policies." Proceedings of the 28th ACM Symposium on Access Control Models and Technologies. 2023. (Received the "Best Paper Award")

PROJECTS

NLP classifier of Canadian attitudes on vaccine mandate — Jan 2022 - Apr 2022

- Developed and fine-tuned a **BERT**-based classifier for Canadian Reddit data to investigate public attitudes toward COVID-19 vaccine mandates, trained on a dataset of 15K **JSON** annotated Reddit messages, achieving **90%** accuracy in identifying comments related to vaccine mandates.
- Successfully deployed the classifier as a screening tool utilizing Pytorch on **AWS** to identify a large amount of Reddit data on the same topic with potential for future research on public opinion and policy-making.

Robot Pose Mimicry Via Kinect — Jun.2017 - Dec.2017

- Built a humanoid robot which would imitate an individual's pose using Kinect cameras, profiled and optimized code, improving the latency from 2 seconds to 1.5 seconds.
- Generated stick figures and its joint angles from an individual's image with the Kinect SDK using **C++**.
- Delivered the joint angle data to the robot **Arduino CPU** via **TCP** in order to mimic an individual's pose.

SAT Solver — Sep 2022 - Dec 2022

- Developed a SAT solver from scratch, utilizing **C++** to determine the satisfiability and evaluate the truth value of boolean formulas under various assignments.
- Applied **object-oriented** programming concepts like virtual function, polymorphism, and inheritance.