

Darwin Liao

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SUMMARY

Early-career Software Developer with full-stack experience building React, Java, and Spring applications, along with testing, API development, and software validation experience. M.Sc. in Computer Science focused on cybersecurity, machine learning, AI, and automotive software security.

EDUCATION

University of Western Ontario — M.Sc. Computer Science 2026

Focus: Cybersecurity, Machine Learning, Automotive Software Security

TECHNICAL SKILLS

Languages: Python, Java, C, JavaScript, Typescript, C++

Libraries / Frameworks: pandas, NumPy, scikit, TensorFlow/Keras, React, Node.js,

Tools: Git, Docker, Linux, VS Code, Wireshark, EC2, Terraform

Specialized Areas: Machine learning, cybersecurity, network security, anomaly detection, network and packet analysis.

PROJECTS

Automotive OTA Security Anomaly Detection System

Built a Python-based machine learning pipeline to detect anomalous files in automotive over-the-air update environments for QNX and AAOS based Infotainment systems.

Eternal Return Online Leaderboard

Built and deployed a leaderboard for a smaller online community event using data from the game's official API. Hosted on EC2.

WORK EXPERIENCE

Web Application Developer

May 2022 – August 2023

Intellijoint Surgical — Kitchener, Ontario

- Developed full-stack features for a surgical pre-planning web application using React, Java, and Spring.
- Built case-sharing, permission-based access, and concurrent-access features for multi-user surgical case workflows.
- Implemented reusable API size/rate limiting for DDoS protection and added unit tests using Jest and Spring testing frameworks.

Software Validation R&D

May 2019 – August 2019

General Electric Grid Solutions — Markham, Ontario

- Developed and automated verification tests for substation protection relay communication. Mainly 8-Series Relays.
 - Worked with IEC 61850, TCP/IP, MODBUS, and SCADA protocols in relay testing and validation.
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PUBLICATIONS

D. Liao and M. A. Elsayed, "OTArmor: Securing Automotive Over-the-Air Updates Against Malware Using Generative Modeling," *CSNet* 2025.