Kordian Mazurkiewicz
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EDUCATION

University Of Waterloo, Waterloo ON (Sept 2021 – Anticipated Apr 2026)

- Bachelor of Applied Science Computer Engineering, Honours, Co-operative Program

TECHNICAL SKILLS

Languages: TypeScript, C++, C, Java, JavaScript, Python, SQL, Verilog, VHDL, ARM Assembly
Frameworks & Libraries: React, Node.js, Redux, OpenCV, PostgreSQL, PyTorch, NumPy, MySQL, Pthreads
Other related: Altium Designer (PCB), COMSOL Multiphysics, AMD Vivado

WORK EXPERIENCE

Relay Financial: Full Stack Software Engineering Co-op (Jan 2025–April 2025)

- Collaborated on a large-scale TypeScript-based full-stack application using React, Sequelize, PostgreSQL, and AWS Lambda with SQS/SNS for asynchronous messaging/notifying.
- Designed and implemented an AWS Lambda function triggered by SQS and SNS to orchestrate data flows across the stack, supporting KYC/KYB fraud detection and User states with reliability and scalability.
- Developed RESTful API endpoints and connected a Sequelize-powered backend to the React frontend, managing complex Redux state for user entitlements, context, and high-volume data handling.
- Integrated Segment to route data-driven events to multiple analytics and engagement platforms, enabling real-time behavioral tracking and event-based workflows.

Unified Engineering: Software Engineering Assistant (June 2023–Aug 2023)

- Lead the development of a CRUD webapp using ReactJS, NodeJS and MySql, utilizing Typescript.
- Developed a full stack app that allowed users to input categories, metrics, data and units to graph their desired needs, as well as arithmetic between added materials for industrial engineering projects.
- Created a decision tree traversed based on their selected, computed and graphed choices of materials and purpose.

Magna Int. : Software/Electrical Engineering Intern (Aug 2022–Dec 2022)

- R&D for automotive vehicles, utilizing python, C++ and electrical engineering practices such as Altium Designer, analysis/synthesis and soldering for prototyping.
- Developed vision systems using python, electrical management PCB systems using Altium designer as well as worked with several types of innovative sensors, circuit analysis and digital/analog communication signals.
- Retrofit vehicles adding developed prototypes.

PROJECTS

RTX/RTOS for STM32 Microcontroller (ECE 350 - Real-Time Operating Systems)

- Developed an RTX in C in a team of four for the STM32F401 board that created the Kernel to manage multithreading, task execution and memory.
- Lead the design and development of a buddy system memory structure for the RTX as well as assisted in development for the scheduling and context switching of threads.

SecureStep (Hack The North 2024 Winner (MappedIn API/SDK Sponsor Prize))

- Developed SecureStep, a smart assistive cane with fall detection and real-time Google maps api driven geolocation, integrated with Mappedin SDK for multilevel indoor mapping and AI-based caregiver navigation.
- Led development for a socket-based server on the cane (C) streaming live JSON data over a local network to a JavaScript/React dashboard, displaying sensor status, coordinates, and emergency routes for caregivers.

Home Security System (Smart Doorbell, Smart Lock, App)

- Smart touchscreen doorbell: Ran on the Linux operating system, communicated through SSH using Parimiko to the door-lock. Contained Open CV and YOLO for facial recognition using python.
- Smart Lock: Ran idle until communicated through SSH to open or close for a deadbolt lock
- App: Created off android studio, displayed a live feed off the smart doorbell.