

# Mischa Lamoureux

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## SKILLS

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Python | C++ | C | Java | ROS | AWS | SCADA | OPC UA | MQTT | Docker | Git | Agile | Project Management

## EDUCATION

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University of Waterloo, Candidate for Honours Computer Engineering Co-op

Sep 2021 – Apr 2026 | Waterloo, Ontario

## PROFESSIONAL EXPERIENCE

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Tesla, Software Engineer

Jan 2024 – Apr 2024 | Austin, Texas

- Utilized **Ignition SCADA**, **OPC UA**, **Python**, **Pandas**, and **MongoDB** to scrub and clean equipment **PLC data** and generate **automated process KPI reports** for all of BiW
- Represented the Process Engineering team by **overseeing a \$3.5 million CMM repeatability study** that utilized on-the-fly **data analysis** and **critical decision-making**
- With **FastAPI**, **NumPy**, and **Matplotlib**, **reduced station false alarms** by **over 30%** by **automatically** alerting Process Engineers of incorrect PLC recordings
- Decreased cycle time** by roughly 15% by identifying, analyzing, and **solving critical line bottlenecks**, utilizing a custom-built **React** diagnostics **app**

Swap Robotics, Autonomous Robotics Software Developer

Jan 2023 – Apr 2023 | Kitchener, Ontario

- Designed and developed a robotics diagnostics dashboard with **React**, **Material UI**, **MQTT**, **MobX State Tree**, and **Docker**, **increasing troubleshooting efficiency** by **over 45%**
- Created and implemented a **GUI** to interface with robot-side configurations via a **ROS Service Pub/Sub node** in **Python**
- Increased maintenance and operation efficiency** by **34%** with a **Python** script to automatically offload fleet video footage via Google Drive's **REST API**
- Created dynamic data visualization and report viewing for complex **DynamoDB/Amazon S3** CSV files using **Chart.js**

Mitch Insurance, Software Developer

Apr 2022 – Aug 2022 | Whitby, Ontario

- Developed a ruleset management web application using **Vue.js**, **Node.js**, and **jQuery** to remap internal data to communicate with external **APIs** via **Express.js**
- Managed data in **MySQL** and **MongoDB** to securely and efficiently save client information
- Increased customer satisfaction** by **23%** by deploying a user feedback feature with **React** and **Axios** that connects to **Jira's** **REST API** for interactive task tracking
- Adhered to **Agile methodology** to produce working code in short sprints

Infinite Mind Pictures, Lead Software Developer

Aug 2018 – Oct 2022 | Calgary, Alberta

- Administered and maintained a **cloud-hosted** environment of more than 25 servers utilizing **FTP** for deployment and **MySQL** for plugin coordination
- Managed a team of 10 members to produce and release **nine Java-based educational applications** in partnership with the **University of Calgary** and the **Virtual Museum of Canada**
- Monitored project performance** through weekly audits to ensure maximum efficiency and customer satisfaction

## PROJECTS

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Fitly, Cross-platform Application [Flutter, Swift, JavaScript, Node.js, MongoDB, Figma]

- Founded and led a startup** to create a **cross-platform app** allowing clients to connect with personal trainers worldwide
- Created **UI/UX designs** in **Figma** and integrated them with **Flutter** and **Swift**
- Designed and implemented architecture for a **NoSQL** database with **MongoDB**

Personal Portfolio, Website [React, CSS, EmailJS, GitHub Pages] [🔗](#)

- Designed and developed a **dynamic single-page website** portfolio using **React**, **CSS**, and **Git**
- Improved **UI/UX design skills** utilizing feedback from past clients

Chime-In, Interactive Electronic Game [C, Microcontroller] [🔗](#)

- Developed and built a single-player Simon-inspired game in **C** with a **STM32 Nucleo Board** integrating multiple pushbuttons and addressable LEDs
- Used **Git** and **Notion** for project organization, team collaboration, and source control

## LEADERSHIP & EXTRACURRICULARS

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ENVenture, Business Development Volunteer

Sep 2023 – Dec 2023 | Kampala, Uganda

- Helped a **non-government organization** to analyze markets of local villages and **sell over \$1000** of **renewable energy** products

Waterloo Engineering Competition Commissioner

Mar 2023 – Jul 2023 | Waterloo, Ontario

- Led a team of 25 members** to assist in the preparation and execution of Waterloo's most successful engineering competition
- Collaborated with faculty members and the Sandford Fleming Foundation to **manage and allocate \$7000 in funds**

Toyota Innovation Challenge

May 2023 | Waterloo, Ontario

- Utilized **Python**, **OpenCV**, **Roboflow**, and **YOLOv8** to detect uncovered holes in the monocoque chassis of vehicles
- Worked with a team of four in a two-day workshop to **win an award** for the **most robust and flexible solution**