# KAELAN MOFFETT-STEINKE

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## Work Experience

### Backr Inc.
*Toronto*
BACKEND DEVELOPER — *June-Sep 2020*

- Designed the companies' main Postgres db and schema, implemented with SQLAlchemy ORM
- Designed and led a team to implement Flask server performing data ingestion 80% faster than previous model
- Developed fullstack webapp using NodeJS + ReactJS stack
- Pioneered company wide DevOps procedures as Git integrated CI, comprehensive unit & integration testing, using Docker to containerize applications

*Flask, Python, Javascript, Google Cloud, AppEngine, PostgreSQL, Docker, NodeJS, SQL*

### CIBC
*Toronto*
FULL STACK DEVELOPER — *Sep-Dec 2019*

- Led the development of a webapp with users nationwide, using SvelteJS as frontend, Flask (Python) webserver backend with OracleDB SQL server
- Improved fraud detection capabilities by creating a title classifier using spaCy, NLTK (Python)
- Achieved "Above and Beyond" award for outstanding performance

*Flask, SvelteJS, Javascript, Python, Tableau, SQL, SASS/SCSS, SpaCy*

### North Inc. (Formerly Thalmic Labs)
*Waterloo*
COMPUTER VISION SOFTWARE DEVELOPER — *Jan-April 2019*

- Improved simulation accuracy by 76% by developing a performance critical DLL plugin that performs raytraces
- Created enhanced optical artifact simulator, using advanced OpenCV matrix calculations in C++
- Improved effectiveness of material property lookup table by developing n-dimensional interpolation algorithm
- Automated a laser test fixture by developing control software in Python & Arduino

*C++, OpenCV, Python, Arduino*

## Projects

### Vent Board Firmware
*UW Rocketry - Electrical Team*

- Developed C firmware for PIC microcontroller on board a rocket flying to 30,000 feet
- Handles valves which control the flow of fuel and oxidizer, communicating with other components via CAN Bus

*C, Embedded*

### I3WM Emulator

- Created Windows native emulator of popular Linux window manager i3 which uses MSVC in C++ for UI manipulation
- Developed data structures to handle management logic using modern C++ techniques

*C++*

### Smart Headlamp
*UTRAHacks*

- Created gesture controlled headlamp with deep learning facial recognition via Haar Cascades in OpenCV
- Implemented Leap Motion Control using C++
- Set up onboard Rasperry Pi and Arduino to control motors, sensors, and lights
- Achieved second place, and received Leap Motion award

*Python, OpenCV, C++, Arduino*

## Skills

### Languages
Python, C++, C, Javascript, Arduino, Bash, Vimscript

### Environment/Tools
Linux (Arch, Debian, Ubuntu), regex, vim, Docker, GNU Make, CMake, Windows Subsystem for Linux

### Backend / Database
Flask, NodeJS, AWS, PostgreSQL, SQLAlchemy, Sequelize, MongoDB, OracleDB, Amazon DynamoDB, Google Cloud, Cloud SQL, Compute Engine

### Frontend Webdev / UI
SvelteJS, ReactJS, HTML, SASS/SCSS, CSS, JQuery, QT, PyQT, Selenium, AppEngine, Latex

### Coursework
Real Time Operating Systems, Advanced Calculus, Digital Computation, Data Structures and Algorithms, Microprocessors

## Education

BASc in Mechatronics Engineering
University of Waterloo
Expected Graduation May 2023

## Awards / Achievements

- Waterloo Engineering Competition 2019 - 2nd place
- CIBC Employee Above & Beyond Award
- UTRAHacks 2018 - 2nd place
- University Bouldering Series 2018 - 2nd place
- 2017 Youth Climbing Nationals - 7th place

## Interests

- Competitive rock climber for 12 years
- National Youth Circus alumni
- Machining, woodworking
- Rock climbing coach during high school