

Zachary Uy

403-702-0690 | zachary.cromwell.uy@gmail.com | [linkedin.com/in/zacharyuy](https://www.linkedin.com/in/zacharyuy) | [github/scbee](https://github.com/scbee) | zachuy.com

SKILLS

Languages: C, C++, Python, JavaScript, TypeScript, HTML, CSS, SQL

Frameworks: React.js, Next.js, Express.js, Node.js, Tailwind, MongoDB, PostgreSQL, Redux, Jest

Tools: Git, AWS, Azure, Docker, FreeRTOS, ROS

Hardware: STM32, Arduino, Raspberry Pi, Nvidia Jetson, Edge Computing

EXPERIENCE

Paramount

Calgary, AB

Software Engineer Intern

May 2022 – Sept 2023

- Increased realized profits by \$1.8 million USD per month for blending operations by leading the development of a quantitative finance tool using **Python** and **C++**
- Decreased profit losses by \$750,000 USD per month across all assets with a web application that delivered real-time updates on asset requirements using **React**, **Flask**, and **AWS Amplify**
- Enhanced Production SCADA web view functionality and usability by developing new features and components using **TypeScript**, **React**, **Flask**, and **PostgreSQL**

Tesla (Kingsman)

Remote

Software Engineer Intern

May 2021 – Apr 2022

- Reduced operational costs by up to 36% by building an energy analytics web application with sensor integrations providing key metrics to clients using **React**, **Express**, and **MongoDB**
- Decreased monitoring costs by 5% by designing and prototyping an airflow sensor that allowed the team to control endpoints through the web app using **STM32**, **FreeRTOS**, **AWS IoT**
- Lowered incident response times by 20% by developing a backend service to automate feature ranking for sensor data anomalies using **AWS Lambda**, **S3**, **Step Functions**, **Glue**, and **SageMaker**
- Improved bug-fix turnaround time by writing automated test scripts and detailed bug reports with replication steps

R3

Remote

Software Developer

Feb 2017 – Jul 2019

- Built real-time gaming analytics software providing users valuable performance metrics leading to **50+ clients**
- Wrote a C++ memory hooking library for third-party gaming applications to gather data used in visualizations and gameplay optimization algorithms
- Improved overlay responsiveness by implementing a fast, bloat-free external window using ImGui

PROJECTS

Autonomous RC Car: A fast and autonomous racing vehicle researching multi-agent pose estimation with path planning and SLAM implemented with **Python** and **C++** in **ROS**

MMORPG Market Toolkit: An extensible assistance toolkit built in **C++** to automatically generate and execute buy and sell orders using user-defined strategies and the Velia Inn **API**

Altitude Determination & Control System: Developed **FreeRTOS** API to control satellite orientation in space to maintain stability and trajectory using **C** and **STM32**

EDUCATION

University of Calgary

Calgary, AB

Bachelor of Science in Mechanical & Mechatronics Engineering

Grad Date: May 2024

- Engineering GPA: 3.8/4.0
- Dean's List (2018, 2019, 2020, 2022)
- Schulich Ignite (Software Tech Director)
- Calgary2Space (Software Team Member)