Caleb Bourbonnais

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EDUCATION

University of Calgary — **Calgary, AB**

Bachelor of Science in Software Engineering, Minor in Entrepreneurship and Enterprise development — *Expected May 2026*

Bachelor of Commerce in Finance, Minor in Data Science *(Transferred to BSc.)*

- Dean's Honour List; Cumulative GPA: 3.5/4.0

SKILLS

Languages	Python | C++ | C | Java | TypeScript
Technologies	React.js | React Native | Expo | Qt | JUnit | MySQL | MongoDB | Node.js | Docker | Git | Jira | Confluence | Amazon Web Services: Amplify, EC2, S3, EBS

WORK EXPERIENCE

OGL Engineering — **Calgary, AB**

Geomatics Engineering Intern — *May 2023 – Sep 2023*

- Operation of Teledyne Galaxy LiDAR sensors in an aircraft. Created weather logging scripts in python that use XM frequency to improve survey line selection process, and decreased point cloud classification time by **~10%**.
- Backend development of a React Native flight crew utility app. Utilized Node.js and MySQL to centralize flight reports and track progress of survey crews, which increased the speed of the flight report gathering process by over **2 times**.
- LiDAR survey data processing. Performed classification of LiDAR point clouds using Terrascan, improving the accuracy of terrain models.

Halton Tool & Fabricators — **Burlington, ON**

Machinist Millwright Apprentice — *Feb 2018 – Apr 2020*

- Engineered and installed assembly line equipment for various projects. Utilized excel to analyze production data, reducing cycle time by **30%**.
- Developed CNC code for manufacturing projects using BobCAD software. Leveraged excel to save design choices, cutting future project design time by more than **1/2**.

EXTRACURRICULAR

University of Calgary Solar Car Team — **Calgary, AB**

Software Team Lead — *Aug 2023 – Present*

Telemetry Team Member — *Oct 2022 – Aug 2023*

- Leading a team of 26 in the development of "Schulich Helios" - 6th generation Solar powered Car. Optimized the teams' planning and assignment of tasks using Jira and Confluence, increasing output by **~20%** in accordance with Agile development practices.
- Development of a backend program which creates JSON packets from bitstream and sends it over MQTT. Uses C++ and Qt6 to reduce latency in this process from previous generation's car by **~500ms**.
- Full Stack development of a Telemetry site utilizing React.js with TypeScript and Tailwind.css to display live vehicle data. Oversee and maintain the team's AWS EBS and EC2 instances to ensure application reliability and scalability.

NOTABLE PROJECTS

PuckJourney — *Jan 2024 – July 2024*

Full Stack web application

- Ice hockey trivia game where the user guesses which teams NHL players have played for. Built using JavaScript with a Python Flask back end, utilizing the NHL API to provide content to **~30** daily users.
- Migrated to React Native with Expo and hosted using AWS Amplify, resulting in a cross-platform application with a modularized design to increase project scalability.

CT Survivor — *Feb 2023 – Apr 2023*

Mobile handheld game in C

- Engineered a handheld game for the first-year engineering design class using an Arduino Mega and TFT color display. Leveraged EEPROM memory to create efficient saved games, achieving the title of the best designed game among 80+ projects.

AutoGarden — *Jan 2023 – Feb 2023*

Embedded Programming

- An automated 3d printed garden box designed in Solidworks and controlled by an Arduino development board. Able to maintain a small herb garden using UV light strips and an Adafruit soil sensor to detect soil moisture levels.