# Mackenzie Cooper

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## Professional Experience

**Software Engineer** **Dometic (Go Power! Division)** **June 2022 - February 2023**

- Developed and deployed embedded software for microcontrollers in fleet trucks to capture telemetry data (solar yield, location, power draw) and transmit it via satellite, enabling centralized real-time monitoring. (C++)
- Implemented a data processing pipeline using Azure IoT Hub, Data Analytics, and CosmosDB to ingest, parse and store telemetry data, overcoming challenges in data handling and cost management. (Azure, SQL)
- Created internal and customer-facing visualizations using Power BI, enabling real-time monitoring and analytics of solar usage across multiple trucks in fleet operations, enhancing decision-making and operational efficiency. (Python, PowerBI)

**Software Engineer** **Eddyfi Robotics Nanaimo** **April 2019 - June 2020**

- Following Inuktun's acquisition, created multiple batch job ETL pipelines to ingest Inuktun and Eddyfi's inventory into a standardized format. (Python, SQL)
- Built a QR code-based part retrieval system integrated with backend inventory databases to accelerate warehouse operations by 10x. (Python, VB)
- Collaborated on software testing and documentation for "ICON," Eddyfi's field interface software, and debugged camera firmware using C#, improving overall system reliability and efficiency. (C#)

## Projects

**DevDigest:** A developer content aggregator and filter from HackerNews (NodeJS, JavaScript, HTML, CSS)

- Designed and implemented a backend Node.js REST API to fetch and filter articles from the Hacker News API, dynamically serving personalized developer content based on user-defined preferences.
- Developed keyword-based filtering and relevance scoring algorithms to deliver tailored content efficiently to a user.
- Created a lightweight frontend in vanilla JavaScript to consume API data and render a responsive user interface with real-time updates.

**Spotify Playlist Utility Manager:** A web app utility for creating and mutating Spotify playlists. (React, Python)

- Developed a web app utility using React and Python, which interfaced with Spotify's API in order to allow additional functionality not offered to a user through their mobile app, such as removing live music from a playlist or reducing a bloated playlist to a simplified set of genres.
- Implemented OAuth2 for secure user login, enabling users to access their pre-existing playlists, or create new ones on their Spotify accounts and interact with them through the web app.

**BattleSnake:** Built an AI which plays the classic game Snake. (Python)

- Developed and deployed a flask-based REST APi server encapsulating A* search and other tailored algorithms to make real-time game decisions for the classic Snake game.
- Engineered the backend logic to process game state data, intelligently targeting goals and avoiding hazards through strategic pathfinding.
- Containerized the application using Docker for streamlined deployment and scalability in test and production environments.

## Education

Bachelor's Degree in Computer Science University of Victoria

## Skills

**Programming Languages:** C++, JavaScript, C#, Python, Java, AVR Assembly **Spoken Languages:** English, French.
**Misc:** React, Git, Bash, HTML, CSS, MySQL, PostgreSQL,ArcGIS, Bootstrap,Latex