

## Advith Thoutu

Ottawa, ON, K2G 6X3

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Portfolio: <https://meeadvith.github.io/>

**Available for a 4 or 12-month co-op term before returning to full-time studies.**

Systems-oriented engineer skilled in the **full computing stack**, from digital logic and microcontrollers to high-level application development

## EDUCATION

### Computer System Engineering, Co-op (4<sup>th</sup> year)

September 2021-April 2026

Carleton University, Ottawa, ON

- GPA: 9.19/12 (B+)
- **Deans' Honour List** (2021-2022)
- **Dr. George O.M. Yee Scholarship in Engineering** (2022)

## EXPERIENCE

### Data Analyst (Co-op)

October 2024 – December 2024

DFO (Fisheries and Oceans Canada)

- Migrated water level data to a centralized database and automated ingestion using API-driven workflows, ensuring data consistency and improving efficiency
- Developed flag mapping functions to ensure data reliability while enhancing visualization tools, such as station maps and time-series graphs, for in-depth analysis

### Web developer (Co-op)

January 2024 – August 2024

ECCC (Environmental & Climate Change Canada)

- Developed high-performance algorithms and interactive data management tools for large datasets, significantly reducing query times for real-time analysis
- Implemented user access control and logging mechanisms, enhancing system security and integrity

## APPLIED PROJECTS

### Autonomous Multi-Agent Pursuit-Evasion on UGVs

September 2025 – April 2026

- Designed a real-time ROS2 Humble control architecture for a multi-agent "Invader-Defender" simulation
- Integrated OptiTrack motion capture data via UDP to drive a closed-loop proportional controller, ensuring precise path-following and target tracking

## HARDWARE SKILLS

- **Platforms:** FPGA (Xilinx), MSP432, Raspberry Pi , ESP32 , ClearPath Jackal , WaveShare Rover
- **Sensors & Peripherals:** LiDAR , OptiTrack Motion Capture , IMU , Motor Controllers
- **Low-Level:** Verilog, ARM Assembly, C, C++, Digital Logic Design, UART/UDP/Serial Communication
- **Tools:** ModelSim, Vivado, RViz , Motive (OptiTrack)

## SOFTWARE SKILLS

- **Core Languages:** C, C++, C#, Python, Java
- **Robotics & OS:** ROS2 (Humble) , Gazebo , Linux (Ubuntu) , DDS , Real-time Systems
- **Web Technologies:** ASP.NET, Blazor, Entity Framework, JavaScript, HTML, CSS, REST API Integration
- **Data Science & DB:** SQL, Pandas, NumPy, SQL Server Management Studio (SSMS)
- **DevOps & Tools:** Azure DevOps, Git, GitHub/GitLab, Jupyter Notebook, Unit Testing