Mitch Roberts
Computer Engineering Student

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Relevant Experience

Co-Founder / Full Stack Web Developer *APPartment (Startup), St. John's NL*
February 2025 - Current

- Built a full-stack rental management platform from scratch using Next.js (React) and Tailwind CSS, supporting features across landlord and tenant workflows.
- Implemented location-aware listings and modular components, enabling real-time filtering.
- Integrated geolocation API to provide live user position tracking and rental discovery across various locations.

Software / Hardware Satellite Developer *C-CORE, St. John's NL*
January 2025 – April 2025

- Developed and tested custom UART protocol in VHDL and C, supporting reliable satellite communication.
- Simulated, synthesized, and verified RTL designs using AMD Vivado, reducing debugging time.
- Contributed to ground station software for analog and digital signal processing.

May 2024 – Augest 2024

- Led development of a custom communications subsystem for the satellite, enabling reliable onboard data transfer.
- Created mock subsystems in Python and C to simulate hardware during integration testing and automate validation.
- Supervised and collaborated with junior co-op engineers to design and refine communication protocols.

Technical Projects

MUNStar-1 Satellite Team *munstar-1.com*
Communication Subsystem Team Lead

- Designed and tested a 9-bit custom UART transmitter using VHDL for inter-module satellite communication.
- Collaborated with subsystem leads to ensure cross-module communication reliability and the satellites success.
- Led communication architecture design and mentored junior developers on protocol implementation.

INCOMING! *github.com/INCOMING*
Academic Project – Unity (C#)

- Co-developed turn based artillery game, supporting multiplayer via custom UDP / TCP protocols
- Built modular game mechanics including damage systems, collision phsysics, and UI state transitions in C#

Wireless Asset Tracker *Ongoing Capstone project*
Academic Capstone Project

- Designing a real-time asset tracking system for large indoor environments, reducing manual search time and improving equipment visibility.
- Developing Bluetooth-based tracking network to locate high-value tools with room-level accuracy

Education

Bachelor of Engineering Co-Op Program - Computer *Class of 2026*
Memorial University of Newfoundland – St. John's, NL

Skills

Languages:	C/C#/C++, Python, JavaScript, TypeScript, VHDL
Web:	Next.js, React, Tailwind CSS
Communication Interfaces:	UART, RS485, I2C, CAN
Tools:	Git, Microsoft Suite, VS Code, Quartus, ModelSim, Vitis, Vivado
Soft Skills:	Leadership, Documentation, Communication, Teamwork

Interests

Embedded Systems | Space Technology | Game Development | Hiking and Outdoors | Team Sports | Working Out