



# Callum Mackenzie

Third Year Computer Science and Statistics Student

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## TECHNICAL SKILLS

**Languages:** Python, C#, C, C++, Swift, Kotlin, TypeScript, Java, R, Rust  
**Frameworks:** .NET, UWP, Qt, React, Node, Maven, Gradle, OpenGL, ESP-IDF, Jetpack Compose  
**Developer Tools:** Git, Linux, Vim, Docker, Jenkins, VSCode, Visual Studio, CMake, Make, AWS, Firebase

## EDUCATION

*The University of British Columbia* Vancouver, BC, Canada  
Bachelor of Science in Computer Science & Statistics (GPA 4.0) Sep 2022 – May 2027

## EXPERIENCE

*Embedded Software Engineer Co-op* Jan – Dec 2025  
General Dynamics Calgary, AB, Canada

- Created robust, precise software for critical military systems on an R&D team
- Developed 3 Linux device drivers and daemons, informing soldiers with battlefield insights
- Resolved 30+ defects in embedded projects (Qt/C++), improving reliability in safety-critical environments
- Reduced CI/CD system runtime by 50% on multiple pipelines with Docker, Python, Jenkins, and AI
- Shipped scalable client functionality in .NET apps interfacing with embedded devices & AI servers
- Created documentation and presented demos for internal AI use cases

*Ice Hockey Official* Jan – Nov 2024  
Thunderbird and Todd Ice Hockey Leagues Vancouver, BC, Canada

- Managed player conflicts by taking action decisively, keeping calm, and communicating clearly

*Camp Counselor* May 2022 – Aug 2023  
IChallengeDiabetes Western Canada

- Received positive feedback on communication with parents regarding child safety and health while managing camper diabetes

## PROJECTS

**FITNET - Embedded Motion Sensing with EMG** | C, ESP-IDF, Swift, iOS, Fusion360 Feb 2025 – Current

- Motion-tracked body position for data analysis from muscle impulse and accelerometer data
- Designed system ground-up from electrical to software design, including custom PCBs
- Utilized microprocessor with Bluetooth Low-Energy (BLE) to communicate with iPhone CoreBluetooth
- Achieved 90% accuracy in muscle activation using custom EMG circuit and accelerometer data
- Created iOS app with SwiftUI to read and process device data with BLE

**Deloitte ThinkTech** | React, Typescript, Javascript, Node, R, DocuSign, UIPath Sep – Nov 2022

- Developed an MVP for a real-world client business problem regarding document tracking in the healthcare industry with two business and one technical teammate
- Placed 4th out of 160+ candidates
- Presented solution overview for 100+ Deloitte employees & executives, fellow competitors, and visitors
- Used UIPath RPA, DocuSign, and AWS, focusing on security to manage sensitive records for client company

**Exvi Fitness** | Java, Kotlin, AWS, R, Android, Git Dec 2021 - Jun 2022

- Developed a full-stack desktop & Android application for tracking personal workouts and sharing with others
- Web scraped and cleaned the data of 2000+ exercises from online datasets using Java and R
- Created a custom login system with 2FA using cryptography to store sensitive user data
- Synced across devices with a serverless backend (AWS), allowing sharing workouts with friends
- Followed responsive UI design principles, allowing multi-platform capability and intuitive use with Kotlin

