# Tyler Beach

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## EDUCATION

**University of Alberta**                                           December 2025 (Expected)
*Bachelor of Science in Computer Science*                                      *Edmonton, AB*

## EXPERIENCE

**Software Developer Intern**                                      January 2025 - April 2025
*QOL MedTech*                                                                  *Calgary, AB*
- Contributed to the development of a healthcare technology startup specializing in **wearable motion sensors** and movement analysis to enhance mobility, injury prevention, and exercise adherence.
- Integrated **3D motion visualization** for Trainers to analyze client movements, resulting in more accurate performance assessments and enhanced feedback mechanisms.
- Implemented a permission-based access system with **Typescript, Fastify and AWS**, enabling role-specific functionality while protecting patient data privacy throughout the platform.

## PROJECTS

**MediMinutes** | *Next.js, JavaScript, Tailwind, AWS, PostgreSQL, Prisma, Python*                [Website]
- Developed and deployed a full-stack medical learning web application allowing users to learn and test knowledge across **200+ medical topics** through daily puzzles, quizzes, and interactive games.
- Scraped and processed **20,000+ lines of medical data** from trusted sources like the FDA and Harvard Health using **Beautiful Soup**, enabling a rich and accurate backend knowledge base.
- Engineered a custom data pipeline that **automatically generates and publishes new crosswords every 24 hours** using a DFS-based crossword construction algorithm, reducing manual workload and boosting engagement.
- Implemented a variety of learning tools including a **"Connections"** game for symptom-to-diagnosis matching, **custom flashcard decks** for active recall, and **multiple-choice quizzes** for practice and self-assessment.

**Course Helper Bot** | *Python, Express.js, JavaScript, MongoDB, Heroku, Linux*                [Repository]
- **Created a RESTful API** using Express.js and JavaScript to serve up-to-date course information for the University of Alberta, ensuring high performance and scalability.
- Developed a **Discord bot** that allows users to interact with the API instantly, providing immediate access to course details directly within the Discord platform.
- Automated the data collection process by implementing web scraping scripts in Python, successfully **extracting and storing over 100,000 lines of course data** in a MongoDB database.
- Hosted the Discord bot on my **Linux server**, ensuring continuous availability and smooth interaction with the API for up-to-date course information on 1000+ courses offered.

**Event Horizon** | *Java, Firebase, JUnit, Espresso, UML*                                      [Repository]
- Engineered an intuitive **event management Android application**, enabling users to effortlessly create, join, and organize events, streamlining event logistics and improving overall user satisfaction.
- Designed and executed robust **unit and UI tests using JUnit and Espresso**, ensuring high code quality and preventing regressions, resulting in a stable and reliable application.
- Collaborated with a team of 6, **conducted sprint planning every two weeks** to ensure streamlined feature integration and alignment with course objectives, contributing to a well-coordinated project.

**Algorithm Visualizer** | *React, JavaScript, Tailwind*                                        [Website]
- Designed an interactive web application to **visualize sorting and pathfinding algorithms** to aid users in understanding algorithmic concepts through visual representation, improving user comprehension.
- Implemented a **pathfinding feature** to demonstrate algorithms like **BFS and DFS** to illustrate their efficiency in finding the shortest path in a grid, providing a comprehensive educational tool.
- Enhanced user comprehension and engagement with **intuitive visualizations and interactive elements**, creating a more effective learning experience.

## SKILLS

**Languages**: Python, JavaScript, TypeScript, Java, C, C++, SQL, Golang, RISC-V
**Technologies**: Firebase, MongoDB, AWS, Supabase, PostgreSQL, Heroku, Linux, Docker, Git, GitHub, Figma
**Libraries/Frameworks**: React, Next.js, Express.js, Fastify, Django, Flask, Tailwind, Gem5