

# Ayan Bin Saif

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## TECHNICAL PROFILE

Mathematics student at the University of Waterloo specializing in Full-Stack Development and AI Systems. Experienced in building scalable applications and multi-agent architectures using React, Swift, and Python.

## EDUCATION

**University of Waterloo** Honours Bachelors of Mathematics (Co-op) 2025 — Present  
Expected Graduation: April 2030

## TECHNICAL SKILLS

**Languages:** Swift, Python, TypeScript, JavaScript, Java, Racket, SQL, HTML/CSS  
**Frameworks:** Next.js 16, React 19, SwiftUI, Node.js, Tailwind CSS 4, Framer Motion, OpenCV  
**Tools/Tech:** Supabase (PostgreSQL), Firebase, Google Gemini (RAG), Git, Unix/Linux, Xcode  
**Core Concepts:** Multi-Agent Systems, Object-Oriented Programming, UI/UX Design, HCI

## WORK EXPERIENCE

**Apple — iOS App Developer (Mentorship)** Feb 2024 — Jul 2024

- Engineered native iOS applications using **Swift** and **SwiftUI** within an exclusive Apple-sponsored technical mentorship program.
- Architected ‘EduBuddy’ following **Apple HIG**, resulting in a 25% increase in perceived user navigation efficiency during beta testing.
- Managed the full **SDLC** from low-fidelity wireframing to final high-performance deployment in **Xcode**.
- Delivered a high-stakes technical demo to industry executives, highlighting feature scalability and memory management optimizations.

## PROJECTS

**AlphaHedge** | Next.js 16, TypeScript, Supabase, Google Gemini [🔗](#) Jan 2026

- Developed an AI-powered investment research platform at the [YC Full-Stack Hackathon](#), delivering institutional grade stock analysis in under 2 minutes.
- Architected a **multi-agent council** using 4 autonomous agents (Fundamental, Quant, Sentiment, Judge) to synthesize independent financial perspectives via a weighted scoring framework.
- Integrated **Google Gemini** for RAG-based follow-up Q&A, allowing users to query historical analysis via a persistent chat system.
- Implemented real-time data subscriptions and secure authentication using **Supabase** and **PostgreSQL**.

**Rate My Rez** | React, Firebase, Tailwind CSS [🔗](#) 2025

- Launched a full-stack housing platform utilizing **React** for the frontend and **Firebase** for real-time data persistence.
- Implemented secure **serverless CRUD operations** allowing users to manage reviews via Firebase Auth verification.
- Designed responsive UI components that ensured 100% layout consistency across mobile and desktop devices.

**Cheeto-Fingers** | Python, OpenCV, MediaPipe [🔗](#) 2025

- Developed a touch-free HCI mapping 21 hand-knuckle landmarks to OS mouse events using **Vector Calculus**.
- Engineered a **jitter-buffering algorithm** to stabilize cursor movement, reducing sensor noise by 90%.
- Built a custom gesture-recognition engine for media navigation, including precision scrolling and volume toggling.