

Aidan Joseph

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EDUCATION

Cornell University, College of Engineering

B.S. in Computer Science

Ithaca, NY

Expected May 2028

EXPERIENCE

Mobile Engineer Intern

May 2026 – Present

CourseLynx

Remote

- Reduced unread chat backlog loading by up to **80–90%** for 500–1,000-message cases by implementing **20-message** Firestore pagination, **100-message** jump windows, and deferred **FlatList** scroll recovery
- Re-architected the messaging home screen for **35,000+ verified students**, unifying courses, groups, DMs, and campus orgs with per-type Firestore pagination and real-time **Zustand** unread badges
- Cut startup data-fetch overhead by caching institution metadata with **Zustand** + **AsyncStorage**, enabling **zero-fetch** warm launches and eliminating duplicate Firestore profile reads per cold start
- Shipped production mobile features through **Kanban**, **Git/GitHub** code reviews, and iterative releases in **React Native**, **Expo**, **TypeScript**, and **Firebase** across chat, onboarding, settings, notifications, and privacy flows for an app supporting **200,000+ messages**

Technology Analyst

February 2025 – August 2025

Youphoria

Remote

- Developed production iOS features for *Youphoria*, collaborating with engineers and product designers to deliver updates for a wellness app on the iOS App Store
- Implemented light/dark mode using **Swift**, **UIKit**, and **Storyboards** and integrated Apple's **UserNotifications** framework to support push notifications for a platform serving **800+ users**

Undergraduate Course Consultant

August 2025 – Present

Cornell Bowers CIS

Ithaca, NY

- Led **2 weekly discussion sections (30+ students each)** and held consulting hours for Cornell's introductory Python course (**700+ students**), mentoring students in object-oriented programming, algorithms, and debugging
- Reviewed programming assignments before release for correctness and clarity, evaluated **600+ student exam responses**, and mentored students through Ed discussions, office hours, and debugging across **3 consecutive semesters**

PROJECTS

WaitTill | *Swift, SwiftUI, MVVM, Swift Testing, UserNotifications*

June 2026 – Present

- Built an async co-watching iOS app in **Swift/SwiftUI** (MVVM, **11K+ LOC**, **no third-party dependencies**) where friends leave timestamped notes on a film and each viewer sees a note only once their own playback passes that moment
- Made spoilers unrepresentable by modeling note position as a two-case enum with no timestamp field for unreached notes, and tracked playback with persisted wall-clock arithmetic — exact across app suspension and termination with **zero background execution**

Eta Compiler | *Java, JFlex, CUP, Maven, Docker*

January 2026 – May 2026

- Co-developed a **22K+ LOC** Java compiler in a **3-person team**, implementing the full pipeline from **JFlex/CUP** lexing and parsing through semantic analysis, IR generation, and x86-64 assembly output
- Engineered backend support for arrays, strings, globals, short-circuit boolean logic, multi-return functions, and calls with **6+ parameters**, resolving ABI and memory-addressing edge cases in generated assembly
- Extended the compiler from Eta to Rho by adding **records**, field access, null semantics, break statements, interfaces, and record-aware type checking, validating behavior across **500+** tracked test fixtures and Docker-based scripts

MNIST Generative AI | *Python, TensorFlow, Keras, CNNs, GANs*

May 2025 – Jun 2025

- Trained a **Generative Adversarial Network (GAN)** to synthesize MNIST-style handwritten digits from random noise
- Designed custom **CNN-based generator and discriminator architectures** using TensorFlow to improve training stability and output quality

TECHNICAL SKILLS

Languages: Python, Java, TypeScript, JavaScript, Swift, C, C++, HTML/CSS, SQL

Frameworks: React Native, React.js, SwiftUI, UIKit, Node.js, Flask, JavaFX

ML & Data Science: TensorFlow, NumPy, Pandas, scikit-learn, SciPy

Tools: AWS (S3, DynamoDB), Docker, Git, Version Control, Linux/Unix, PostgreSQL, Figma, Excel

Concepts: Data Structures & Algorithms, Object-Oriented Programming, Algorithms and Analysis, Complexity Analysis, REST APIs, Agile Development, Big Data, Deep Learning, Machine Learning, Compilers, Computer Organization, System Fundamentals, Design Patterns, Artificial Intelligence, Operating Systems, Programming Languages