

# Brandon Wong

[portfolio-brandonw504.vercel.app](https://portfolio-brandonw504.vercel.app) | [linkedin.com/in/brandonw504](https://linkedin.com/in/brandonw504) | [github.com/brandonw504](https://github.com/brandonw504) | [brandonw504@outlook.com](mailto:brandonw504@outlook.com)

---

## EDUCATION

### University of California, Davis

Computer Science, B.S. and Statistics, B.S. (Machine Learning Track)

Technology Management Minor

**Coursework:** Data Structures and Algorithms, Operating Systems, Computer Networks, Parallel Programming, Deep Learning

---

Expected Graduation June 2025

Davis, CA

3.76 GPA

## TECHNICAL SKILLS

**General:** PostgreSQL, MongoDB, Unit Testing, Authentication, Vercel, Docker, Multithreading, CUDA, RAG, Git, Linux, Unix

**Languages:** C++, C, Python, Golang, JavaScript, TypeScript, Swift, Java, HTML, CSS, SQL, R

**Frameworks:** SwiftUI, Next.js, React.js, Node.js, React Native, Prisma, Apollo GraphQL, Playwright, Auth.js, Unity, PyTorch, LangChain

---

## EXPERIENCE

### Apple

June 2023 - Sept 2023

#### Software Engineering Intern

Cupertino, CA

- Engineered the Music Recognition module in macOS Control Center for the Shazam team using SwiftUI
- Independently started a digital signal processing **research project** and presented a product prototype to Shazam's director
- Addressed issues and built features in the Events app and macOS Control Center, benefiting over 100 million monthly users
- Demonstrated initiative by pitching a sleep apnea detection prototype to 5 members of the Health team leadership

### Include at Davis

Sept 2023 - Present

#### Technical Lead

Davis, CA

- Leading a team** of 15 engineers to develop an E-Commerce Management System for professional clients
- Translated complex user requirements into a modular, scalable system that can be easily **maintained long-term**
- Taught 5+ technical **workshops** on GraphQL, SQL/NoSQL databases, Next.js, frontend best practices, and system design
- Architected a template codebase integrating Apollo GraphQL, Prisma, and Next.js that is used in 15+ different projects

### HackDavis

Oct 2023 - Present

#### Technical Director

Davis, CA

- Built 5+ modular UI components for landing pages ([hackdavis.io](https://hackdavis.io) and [2024.hackdavis.io](https://2024.hackdavis.io)), collaborating closely with designers
- Developed **infrastructure** and designed the system for a scalable, reusable judging app ([judging.hackdavis.io](https://judging.hackdavis.io))
- Designed an **authentication system** with magic links for seamless, secure registration of 1000+ hackers and judges
- Engineered fair matching and scoring algorithms, processing 500+ team scores with **analytics** displayed on a custom dashboard
- Architected an authenticated REST API with MongoDB models to manage 1000+ users and 500+ scoring submissions

### AggieWorks

Jan 2023 - June 2023

#### Software Engineer

Davis, CA

- Built a roommate matching app ([RoomU](https://RoomU.com)) in React Native, implementing image caching, database functions, and UI components
- 

## PROJECTS

### Shazam Social ([Github](#))

SwiftUI, Realm, and MongoDB

- Developed an iOS social media app with Model View Viewmodel architecture for users to share Shazamed songs
- Implemented user authentication, a custom map, an image caching system, and 5+ unique UI components

### Field Event Tracker ([Github](#))

SwiftUI and CoreData

- Created an iOS app to track and calculate results for field events at track meets, decreasing scoring time by 10x at 5 track meets

### Operating Systems Projects

C++ and Shell Script

- Developed a distributed file system, a multithreaded web server, a user mode Unix shell, and several Unix utilities

### Shopprr ([Github](#))

SwiftUI, Node.js, Express.js, Realm, and MongoDB

- Developed a shopping list app with text recognition to scan price tags, creating a REST API to access purchases

### Song Vocal Extraction ([Github](#))

PyTorch, Scikit-Learn, and Librosa

- Trained a deep convolutional U-Net to isolate song vocals using spectrograms, producing a research report

### Deep Learning Projects ([Github](#))

PyTorch

- Implemented window attention in nanoGPT LLM, decreasing runtime by 14% and maintaining performance
- Finetuned a vision transformer model and improved student model loss by 10% using knowledge distillation