Brandon Wong

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EDUCATION

University of California, Davis   Davis, CA | Expected Graduation June 2025
Computer Science, B.S. and Statistics, B.S. (Machine Learning Track)
Technology Management Minor | GPA: 3.70
Coursework: Data Structures and Algorithms, Operating Systems, Computer Networks, Computer Vision, Deep Learning

TECHNICAL SKILLS

General: PostgreSQL, MongoDB, Unit/Integration Testing, Authentication, AWS, Docker, Multithreading, Git, Linux
Languages: C++, C, Python, JavaScript, TypeScript, Java, Swift, HTML, CSS, SQL, R
Frameworks: SwiftUI, Next.js, React.js, Node.js, React Native, PyTorch, Scikit-Learn, Prisma, Apollo GraphQL, Jest, Auth.js

EXPERIENCE

Apple | Software Engineering Intern   Cupertino, CA | June 2023 - Sept 2023
- Developed 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 prototype to Shazam's director
- Improved location filtering in Shazam's Events app, impacting over 100 million monthly users
- Demonstrated initiative by pitching a sleep apnea detection **prototype** to 5 members of the Health team leadership

HackDavis | Technical Director   Davis, CA | Oct 2023 - Present
- Built 2024.hackdavis.io and judging.hackdavis.io for California's largest student-run hackathon (1200+ attendees)
- Taught SwiftUI, **Next.js**, and full stack web and mobile development in **technical workshops**
- Engineered fair matching and scoring **algorithms**, processing 1000+ team scores displayed on a custom dashboard
- Architected an authenticated REST API with **MongoDB** models to manage 50+ judges and 150+ teams
- Developed 10+ responsive UI components such as a custom swiping image carousel and an interactive prize list

Include at Davis | Technical Product Manager   Davis, CA | Sept 2023 - Present
- **Leading** a team of 20 engineers to develop an E-Store and Content Management System for professional clients
- Taught **technical workshops** on GraphQL, databases, and **Next.js**, and performed meticulous code reviews
- Developed a database migration system for MongoDB and wrote **unit tests**, improving developer experience
- Engineered a **GraphQL** API with **Prisma** and **PostgreSQL** to manage complex relations between entities

AggieWorks | Software Engineer   Davis, CA | Jan 2023 - June 2023
- Built and deployed a roommate matching app called RoomU for UC Davis students in **React Native**
- Implemented database functions in **Supabase**, image caching, and 10+ reusable and reliable UI components

PROJECTS

Shazam Social (Github)   SwiftUI, Realm, and MongoDB
- Developed an iOS social media app with **MVVM architecture** for users to share Shazamed songs
- Implemented **user authentication**, a custom map, and a versatile cached image component

Field Event Tracker (Github)   SwiftUI, CoreData
- Developed an **iOS** app to track and calculate results for field events at track meets, decreasing scoring time by 10x
- Used at 5+ local track meets, greatly improving athlete and meet director experience

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
- Currently implementing a **transformer** based variant, and deploying the model to a website using **Flask**

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**