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 Architecture, Computer Networks, Deep Learning, Computer Vision, Time Series Analysis, Data Science, Combinatorics, Discrete Math, Operations Management, Entrepreneurship

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SKILLS

General: Databases (PostgreSQL, MongoDB), Unit Testing, Google Cloud, Vercel, Docker, ORM, Git, Linux

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

Frameworks: SwiftUI, Next.js, React.js, Node.js, Express.js, React Native, PyTorch, Scikit-Learn, Apollo, Jest

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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, presented a prototype to Shazam director
- Improved location filtering in Shazam's Events app, impacting over 100 million monthly users
- Demonstrated initiative by pitching my own **novel feature prototype** to 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)
- Engineered fair **matching and scoring algorithms**, processing complex user data displayed on a custom dashboard
- Architected an authenticated REST API with MongoDB models to manage 50+ judges and 150+ teams
- Developed responsive UI components such as a custom swiping image carousel and an interactive prize list
- Led **technical workshops**, teaching SwiftUI, Next.js, and full stack web and mobile development

Include at Davis | Technical Product Manager   Davis, CA | Sept 2023 - Present
- Currently leading development of a **Content Management System** and an **E-Store** framework for our clients
- Engineered a **GraphQL API** using Apollo and Prisma to create a reusable management system for each store
- Developed a **database migration system** for MongoDB and wrote **unit tests**, smoothing developer workflow
- Performed meticulous code reviews, enforcing industry standards to ensure site reliability and scalability

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

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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

Shoppr (Github)   SwiftUI, Node.js, Express.js, Realm, and MongoDB
- Developed a shopping list app using **text recognition** to quickly scan price tags, creating a purchases **REST API**
- Implemented **user authentication**, and users can search for the lowest prices from different stores

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**