Brandon Wong

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EDUCATION

University of California, Davis   Expected Graduation June 2025
Computer Science, B.S. and Statistics, B.S. (Machine Learning Track)   Davis, CA
Technology Management Minor   3.75 GPA
Coursework: Data Structures and Algorithms, Operating Systems, Computer Networks, Computer Vision, Deep Learning

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TECHNICAL SKILLS

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

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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
- Improved location filtering in Shazam's Events app by prioritizing current location, impacting over 100 million monthly users
- Demonstrated initiative by pitching a sleep apnea detection **prototype** to 5 members of the Health team leadership

HackDavis   Oct 2023 - Present
Technical Director   Davis, CA
- Built 2024.hackdavis.io and judging.hackdavis.io for California's largest student-run hackathon (1200+ attendees)
- Taught SwiftUI, **Next.js**, Flask deployment, and full stack web and mobile development in 3 **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   Sept 2023 - Present
Technical Lead   Davis, CA
- **Leading** a team of 20 engineers to develop an E-Store and Content Management System for professional clients
- Taught 5+ technical **workshops** on GraphQL, SQL/NoSQL databases, **Next.js**, and system design
- Architected template codebases integrating Apollo **GraphQL**, **Prisma**, and Next.js that are used in 20+ different projects
- Mentored 25+ engineers over 2 years on best practices for building and deploying Next.js apps on **serverless** infrastructure

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

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**

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

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**

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