MANASVINI NARAYANAN

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EDUCATION

University of California, Davis **Sep 2021 - June 2025**
Bachelor of Science in Computer Science and Engineering
Awards and Honors: Dean's List - Winter Quarter 2022, Fall Quarter 2024, Winter Quarter 2025

TECHNICAL SKILLS

C++|C | Java | Javascript |React |Git |Linux |Python|SQL |Bash| Angular| Node.js | HTML & CSS|Typescript| Fourier Analysis| Machine Learning|Computational Neuroscience |Audio Processing |MATLAB| Docker | Embedded Systems | Swift | Digital Signal Processing |Firebase | Kotlin

EXPERIENCE

Software Engineering Intern - Audio Triage Team (AMT) Jun 2024 - Sep 2024
Apple Inc. Cupertino, CA

- Designed and built a **JavaScript**-based extension for an audio visualization triage tool, enabling color-coded grouping and interactive waveform rendering on a timeline, significantly improving developers' ability to analyze and interpret audio data.
- Developed a **Python**-based audio analysis pipeline to extract key audio metrics, perform volume analysis at every second, and structure data for timeline rendering, boosting analysis efficiency, and supporting advanced debugging workflows.
- Leveraged advanced regular expressions to parse diagnostic metadata such as software layer name, timestamp, and capture context from complex filename patterns across nested directory structures, automating a manual and long process.
- Engineered **Bash** scripts for virtual environment setup, activation, and integration with the Python audio processor, enabling the audio team to streamline workflow and significantly boost overall efficiency by 50%, accelerating the detection and resolution of audio bugs.

Software Engineer - iOS app for Parkinson's Disease and Deep Brain Stimulation Jan 2025 - Present
UC Davis Department of Computer Science @ College of Engineering Davis, CA

- Designed and developed a patient-centered iOS application using **SwiftUI**, **HealthKit,** and **CloudKit** to support individuals with Parkinson's disease undergoing Deep Brain Stimulation, collaborating with UC Davis Neurological Surgery
- Translated clinical requirements into technical features through close coordination with neurologists, integrating **Core Motion**, **HealthKit**, and standardized questionnaires and cognitive games within the app for real-time monitoring and assessment. Made evidence-based UI/UX decisions to ensure ease of use for elderly patients with motor impairments.

Undergraduate Researcher and Software Engineer April 2023 - Present
Speech Neuroengineering and Cybernetics Laboratory, Centre for Mind and Brain, UC Davis Davis, CA

- Engineered a selective amplification hearing device that uses gaze-tracking to dynamically focus on and isolate audio sources, and transcribes conversations in virtual reality in real-time, thereby improving conversation clarity & speech intelligibility.
- Implemented advanced beamforming algorithms, focusing on MVDR techniques, with MEMS microphones to optimize auditory quality and source separation across varied acoustic environments. Deployed components in Docker containers for consistency, scalability, and efficient collaboration across development and testing environments.

Software Engineering Intern Jun 2022 - Aug 2022
Weave Growth Partners (lower middle market private equity firm) Redwood City, CA

- Launched a low-code web application that helps Weave raise money from a base of HNW investors.
- Implemented requirements into a front-end and a no-code back-end that integrated APIs and automated triggers.

PROJECTS

- **Sound Frequency Analyzer:** Implemented an audio frequency analyzer based on a mic input to demonstrate real-time signal processing using FFT, an application to capture, process, and visualize audio data using SciPy and Matplotlib.
- **DocuVault:** Engineered a robust SwiftUI iOS document locker with secure OAuth 2.0 (Auth0) authentication, JWT session management, and offline access, integrating VisionKit and QuickLook for seamless PDF scanning and storage.
- **MiGrate (AI-Powered Code Migration with Git MCP):** Developed a tool to convert React to Next.js using Claude 3.7 and Git MCP, supporting both local and GitHub repos with live previews and batch processing.
- **Bike Overwatch & Location Tracker:** Developed an IoT bike security system with CC3200, integrating IR control, accelerometer-based alerts, GPS tracking, and AWS IoT Core for real-time notifications, culminating in a robust, field-ready prototype.

LEADERSHIP

Executive Tech Lead @ Google Developer Student Club at UC-Davis: Presented an in-person and online workshop on **"Google Cloud Confidential Computing"** for 700+ attendees.
Executive Advisor @ SacHacks: Led a 20-member team to host three hackathons for 900+ participants, overseeing event design, logistics, sponsorships, and workshops.