

ANIRUDH VENKATACHALAM

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EDUCATION

University of California, Davis

Bachelor of Science in Computer Science and Engineering

Sep 2021 - June 2025

Relevant Coursework: Data Structures and Algorithms, Algorithm Design & Analysis, Software Engineering, Operating Systems, Compilers, Computer Networks, Probability & Statistical Modeling, Theory of Computation, Artificial Intelligence, and Data Science.

TECHNICAL SKILLS

Python | C++ | C | Java | HTML & CSS | JavaScript | Angular | React | Node.js | Swift | Flutter | TypeScript | R | MySQL | MongoDB | CloudKit | AWS | GCP | Unix | Bash | Git | Audio Processing | SAP IBP | Docker | Postman

WORK EXPERIENCE

Undergraduate Researcher and Software Engineer

June 2024 - Present

Speech Neuroengineering and Cybernetics Laboratory, Centre for Mind and Brain, UC Davis

Davis, CA

- Developed an end-to-end audio processing & advanced automatic speech analysis pipeline for clinical research with patients suffering from ALS and epilepsy using Python integrating denoising, speaker diarization, AWS transcribe, and acoustic analysis, leveraging speech processing libraries such as OpenSMILE for acoustic feature extraction and Montreal Forced Aligner containerized using Docker for reproducibility and scalable deployment.
- Trained neural network models such as NANSY++ for enhanced speech synthesis and processing for advanced clinical analysis.
- Contributed to the development of a sentiment analysis module using natural language processing (NLP) techniques to identify and quantify emotional tones in speech data.

Software Engineering Intern - SAP Digital Supply Chain

July 2024 - Sep 2024

CloudPaths Inc.

Newark, CA

- Developed and optimized data integration workflows using Open Data Protocol (OData) API to support external forecasting and preprocessing functions within SAP Integrated Business Planning (IBP).
- Scripted Python algorithms for external forecasting methods, creating and executing RESTful API calls with Postman to enable seamless data exchange between SAP IBP and external systems, ensuring efficient and reliable communication.
- Automated command execution for external systems using SAP IBP scripting and API interfaces, enhancing interoperability and streamlining data processing pipelines.

Software Engineering Intern

June 2022 - Aug 2022

FundsIndia.com (Leading Investment Platform for Stocks and Mutual Funds)

Chennai, India

- Engineered interactive tools using Angular and TypeScript for a high-traffic investment platform, increasing user adoption by 75% through feature enhancements tracked via Google Analytics.
- Improved platform efficiency by reducing website launch time by 26% through instance configuration. Employed advanced performance optimization techniques to streamline platform efficiency.
- Collaborated with cross-functional teams to resolve user pain points via code reviews, agile sprints, and debugging sessions.

PROJECTS

- Undergraduate CSE Capstone Project:** Developed an iOS Application to assess chronic pain and movement disorders in patients with Parkinson's disease undergoing Deep Brain Stimulation, integrating mobility tracking and physiological monitoring using SwiftUI for development and CloudKit for secure backend data storage.
- DocuVault (HackDavis 2025 Winner):** Built a secure iOS application for intelligent document management with features like OCR-based scanning, smart search, and version control. Implemented secure authentication via OAuth 2.0 and JWT, with offline-first access through efficient local persistence. Designed an adaptive UI to manage time-sensitive document requests.
- Not Nimble Miner:** Engineered a Python clinical note classification system using SpaCy, Pandas, Word2Vec embeddings, and logistic regression, delivering a 98% accuracy, and 20% precision improvement in healthcare decision-making.

LEADERSHIP

Technical Director

Sep 2023 - Present

Google Developer Student Club @ UC Davis | Davis, CA

- Led the software development of a geolocation app for proximity-based reminders, using React Native and Google Cloud Platform. Collaborated with the startup TerraAI to develop a tailored website using MongoDB, Express.js, React.js, and Node.js.
- Delivered a workshop on Retrieval Augmented Generation (RAG) Architectures to the tech community around the US.

President

Feb 2022 - Present

SacHacks (sachacks.io) | Sacramento, CA

- Led and collaborated with a team of 20 that hosted Greater Sacramento's largest intercollegiate hackathon thrice attracting 500+ global participants from 50+ countries through online and in-person events, focusing on facilitating competition in coding, entrepreneurship, and design. Built an engaging platform for a worldwide audience