Adithya Sakthimani

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Experience

Product Developer Intern, Spiked AI – Palo Alto, California 03/2025 – 06/2025

- Built a Selenium bot using **undetected-chromedriver** to automate Google Meet joining with human-like behavior.
- Captured and transcribed real-time meeting audio using **PyAudio** and **OpenAI Whisper large** deployed on EC2.
- Integrated **Gemini API** via **Vertex AI** for advanced language understanding and dynamic response generation.
- Deployed services on **Google Cloud E2 instances** with **Firestore** for real-time data storage and access.
- Enabled file upload with caching, reducing response latency from **30s to 7s** for faster and smoother interactions.
- Deployed a low-latency **WebSocket server** on AWS for real-time transcription streaming and **speaker diarization**.

Projects

Duonet.in – Multiplayer Gaming Platform Github Link

- **Developed** a **real-time multiplayer gaming platform** featuring classic games like **Othello, Battleship, Connect 4, TicTacToe, and Rock Paper Scissors** using **React.js** (frontend) and **Node.js** (backend).
- **Implemented Socket.IO** for seamless **real-time communication** and game state synchronization.
- **Designed** a flexible room system for **private rooms, public lobbies**, and **random matchmaking**.

DerivIQ – Option Price Prediction Platform Github Link

- **Developed** a **MERN** and **Flask**-based web app for real-time **option price prediction** using **70k Yahoo Finance** records.
- **Engineered features** like **Greeks, moneyness**, performed **GARCH-based volatility forecasting**, and trained models (**XGBoost, Gradient Boosting**) with **85–90% accuracy**.
- **Enabled** user uploads, **hyperparameter tuning**, and interactive prediction visualization through a **clean, responsive UI**.

FPGA – Based Digital Filter Design on PYNQ-Z2 Github Link

- **Designed 100th-order FIR digital filters** (Low Pass, High Pass, Band Pass, Band Stop) using **Verilog HDL**, synthesized with **Xilinx Vivado**, and deployed to the **PYNQ-Z2 FPGA board**.
- **Interfaced** with the **PYNQ audio codec** using **Python** to process real-time mic input and simulate filter response via **software and hardware acceleration**, achieving up to **100× speedup**.
- **Visualized** amplitude and frequency responses using **Jupyter**, **Matplotlib**, and **NumPy**.

Elevate Fitness – AI-Powered Fitness Tracker Github Link

- **Built** an **AI-powered fitness tracker** using **computer vision** and embedded **sensors** for **real-time exercise analysis**.
- **Implemented** a **workout dashboard** using **two NodeMCUs** with **heartbeat, temperature, and gyro** sensors.
- **Achieved 98% accuracy** in pose estimation using **OpenCV**, and deployed using **React.js, Flask, Node.js, MongoDB**.

Skills

- **Programming: JavaScript, Python, C, C++, Assembly**, Embedded C, HTML, CSS
- **Web Technologies: React, Next.js, Node.js, Flask, Express, Socket.IO**
- **Cloud & DevOps: Google Cloud (Vertex AI, Firestore, E2)**, **Amazon AWS (EC2, Elastic Beanstalk)**
- **AI & APIs: OpenAI Whisper**, **Gemini API**, GARCH, XGBoost, GCP AI integrations
- **Tools & Platforms: Git, MongoDB, VS Code, PulseAudio, xvfb**, MATLAB, Jupyter, OrCAD PSpice, LTspice
- **Problem Solving: 620+ LeetCode problems solved**, strong grasp of DSA and algorithmic techniques

Education & Certifications

RV College of Engineering, Bangalore – Electronics and Telecommunication 09/2023 – Present

- **CGPA at the End of 3rd Semester:** 8.90
- **Relevant Coursework:** DSA, C Programming, Python Programming
- **NPTEL Certification in Data Structures and Algorithms** – Secured a place in the **top 1% of learners** nationwide.