Mahima Aruna

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LinkedIn | GitHub | LeetCode

EDUCATION

PES UNIVERSITY 2022 - 2026
Computer Science Engineering Bachelors Bengaluru, India
CGPA: 6.99

GR PU COLLEGE 2020 - 2022
(Physics, Chemistry, Mathematics, Computer Science) CLASS XII PU Bengaluru, India
Percentage: 79.5%

SRI AUROBINDO MEMORIAL SCHOOL 2013 - 2020
(Physics, Chemistry, Social Science, Mathematics) Class X Bengaluru, India
Percentage: 76%

EXPERIENCE

NIVETTI SYSTEMS | Software Engineering Intern Bengaluru, India | June 2025 – July 2025

- Engineered a real-time "Agentic Human Sensor Network" by developing a full-stack IoT system for human presence detection and critical parameter monitoring, including fall detection, vital signs, and sleep patterns.
- Developed firmware for an ESP32-WROOM-32 board using C++ (Arduino IDE) to interface with a C1001 mmWave Human Detection Sensor and enable real-time data streaming over a TCP/IP socket connection.
- Created a modular Python backend to serve as an AI Agent, which processes raw JSON data from the sensors and dispatches it to specialised detection modules for fall and sleep analysis.
- Integrated the Gemini LLM API into the backend using prompt engineering to provide advanced contextual analysis and generate actionable insights from complex sensor data, successfully preventing hallucinations and providing accurate situational awareness.
- Implemented a robust logging system that stores all incoming sensor data and LLM responses to daily .jsonl files for debugging and post-analysis.

SKILLS

Programming Languages	Python, C++, C
Libraries/Frameworks	Scikit-Learn, Node JS, HTML, CSS, Pandas, Numpy, TensorFlow, Flask, Flutter, React
Tools / Platforms	Kaggle, Google Colab, VSCode, Github, Apache Kafka, Spark, Hadoop, Arduino, C1001 (Human Presence Detector Sensor), n8n, ESP32, Gemini API
Databases	MySQL, MongoDB

PROJECTS / OPEN-SOURCE

AGENTIC HUMAN SENSOR NETWORK | Link Python, C++, Gemini LLM API, ESP32, mmWave Radar, Arduino IDE, TCP/IP, JSON

- Engineered a full-stack IoT system from physical hardware to an intelligent backend AI Agent for advanced human activity monitoring.
- Developed firmware in C++ using the Arduino IDE for an ESP32-WROOM-32 board to interface directly with a C1001 mmWave Radar sensor.
- Implemented a real-time Python backend and specialised heuristic modules for precise fall detection, sleep analysis, and vital signs monitoring.

- Integrated the Gemini LLM API as an AI Agent, using prompt engineering to convert raw sensor data into contextual insights without hallucination.
- Established reliable TCP/IP socket communication between the edge device and backend, and implemented a robust data logging system for debugging and analysis

AGRI-VOICE AGENT: MULTILINGUAL AI ASSISTANT FOR INDIAN FARMERS | Link Python, FastAPI, JavaScript, Tailwind CSS, Git, GitHub, Vosk, gTTS, Gemini Pro, Google Translate

- Developed a voice-first, multi-agent AI assistant to provide real-time, location-specific agricultural advice to farmers in Hindi.
- Engineered a full-stack system with a Python FastAPI backend and a JavaScript frontend to handle audio recording, transcription, and text-to-speech.
- Implemented a pivot language strategy by translating Hindi queries to English and then back to Hindi, which significantly improved the accuracy and reliability of the agent's responses.
- Integrated various APIs for real-time data (OpenWeather, Gemini Pro) and leveraged a multi-agent architecture to route queries related to weather, soil, and market prices.
- Successfully solved the challenge of low-resource language transcription by creating a robust system that can understand and respond to complex user requests.

PATIENT RECORDS MANAGEMENT SYSTEM | Link MySQL, Python, Flask, HTML

- Developed a Flask-based hospital management system that streamlines patient data, appointments, prescriptions, and billing.
- Implemented secure, role-based login for doctors, patients, and administrators with dynamic dashboards and real-time CRUD operations.

SIMPLE AI CHATBOT | Link Python, ChatGPT API, OpenAI, HTTP Requests, JSON

- Built a chatbot in Python that interacts with users and generates intelligent replies using the ChatGPT API.
- Designed a clean command-line interface to send user messages and display dynamic responses in real time.
- Integrated OpenAI's API with robust error handling and conversation flow control using simple HTTP and JSON techniques.

MUSIC PLAYLIST GENERATOR | Link C, CSV Handling, YouTube API

- Developed a C-based music playlist generator with YouTube API integration for dynamic song search and addition.
- Implemented CSV handling for local song storage, shuffle and playback controls, and an intuitive command-line interface.

PHOTO EDITOR | Link OpenCV, Tkinter, Python

- Built a Python-based photo editor using OpenCV and Tkinter with a simple GUI for applying image filters.
- Implemented features like black & white, sepia, pencil sketch, crop, brightness control, and contrast adjustments.

CERTIFICATIONS

- Certificate of Completion for Software Engineering Internship at Nivetti Systems - Nivetti Systems
- Python for Data Science, AI & Development - Coursera
- Introduction to Generative AI - Coursera
- Introduction to Large Language Models - Coursera

HONORS & AWARDS

- DAC Scholarship
- EPOCH AURA Hackathon (2023)- Was among the top 10 teams for a Datathon conducted by the AURA CLUB of PES University.
- Professional Speaker (2022) - Delivered educational talks on Chemistry to underserved school children in multiple languages..