

Jairam

📍 Chennai jairam.ravichandran5@gmail.com 📞 6383211917 [in](#) Jairam [📧](#) Jairam

Profile

Electronics and Communication Engineering student at VIT with strong experience in applied machine learning, digital signal processing, and time-series analysis. Skilled in designing end-to-end ML systems, including feature engineering, model evaluation, and deployment, to solve real-world engineering and data-driven decision problems.

Education

VIT Chennai

B.Tech in Electronics and Communication Engineering

Aug 2023 – May 2027

CGPA: 8.9

Coursework: Probability & Statistics, Linear Algebra, AIML, Calculus, Differential Equations, Signals & Systems

Experience

June 2023 Inplant Trainee

Bharat Electronics Limited (BEL)

Chennai, India

- Gained hands-on exposure to defense-grade electronic systems across 3 production stages, including component assembly, PCB fabrication, and system-level testing in an industrial manufacturing environment.
- Observed processes in radar system design, PCB fabrication, and testing for real-time applications.

Present Generative AI Intern

NuSummit

India

- Developing a Retrieval-Augmented Generation (RAG) chatbot using hybrid retrieval combining semantic search (embeddings) and keyword-based search for improved context accuracy.
- Implementing vector database-based retrieval pipelines to efficiently store and query embeddings for context-aware responses.
- Integrating Large Language Models (LLMs) to generate grounded and context-relevant answers.
- Working with Python, prompt engineering, and NLP techniques to optimize chatbot performance and reduce hallucinations.

Projects

Agentic Multimodal Stress Analysis | Python, DSP, Scikit-learn, Streamlit, Librosa, NumPy.

[Link](#) | 2025

- Built a multimodal DSP-ML pipeline using EEG and speech signals to classify stress vs. relaxed states in real time.
- Extracted EEG bandpower and acoustic features (MFCC, chroma, ZCR, RMS), achieving 75–80% classification accuracy.
- Developed a Streamlit-based inference system with agentic fusion for sub-second stress prediction and recommendations.

Cognitive-Aware Legal Document Simplification System | Python, Mistral LLM, Ollama, Scikit-learn.

- Developed an AI-based legal text simplification system using cognitive load estimation and LLM-based rewriting.
- Applied K-Means clustering for dynamic complexity analysis and adaptive prompt generation.
- Improved semantic retention and simplification quality using ROUGE and BERTScore evaluation metrics.

Mini Advanced Driver Assistance System (ADAS) | Embedded C, STM32, I2C, PWM, ADC, UART.

[Link](#) | 2025

- Developed a real-time Mini ADAS prototype using STM32 NUCLEO-L152RE with ultrasonic, accelerometer and LDR sensors.
- Implemented obstacle detection, adaptive braking and automatic headlight control using PWM, ADC and I2C protocols.
- Designed embedded control logic in STM32CubeIDE with sensor fusion and interrupt-driven data acquisition for autonomous safety features.

Technical Skills

Programming Languages: Python, C++, Java, MATLAB

Data & ML Tools: NumPy, Pandas, Scikit-learn, PyTorch, Streamlit, MySQL

Version Control: Git

Achievements

- Finalist in IBM Qiskit Hackathon 2024

Additional

LeetCode: Max Rating: 1507 | Solved 350+ DSA Problems | Top 42.11% Globally | 4 Badges | Pupil