Padala Hemanth Subbi Reddy

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VIT Chennai 'Campus, Chennai, India

Profile Summary

Undergraduate with strong foundations in AI, data science, SQL analytics, and applied machine learning. Hands-on experience building predictive models, experimentation pipelines, and end-to-end data workflows across structured data, text, and audio. Experienced with ASR, LLMs, and GenAI, and skilled at translating business and research problems into scalable analytical and ML solutions.

Education

Vellore Institute of Technology (VIT) Chennai — Expected 2026
B.Tech in Electronics and Computer Engineering — **CGPA: 8.74/10**
Relevant Coursework: Statistics, Machine Learning, Deep Learning, Big Data (Hadoop), NLP, Computer Vision

Technical Skills

Programming	Python, R, SQL (MySQL), C/C++
Analytics & Statistics	Hypothesis Testing, Experimentation, Forecasting, Segmentation, Metrics Design
Machine Learning	Regression, Classification, Clustering, Gradient Boosting,, Transformers
Audio & Video AI	ASR, STT, TTS, Speech Enhancement, Whisper
GenAI & LLMs	RAG Pipelines, Embeddings, Prompt Engineering
Frameworks & Tools	PyTorch, TensorFlow, HuggingFace, FAISS, ChromaDB, Hadoop
Analytics Use-Cases	Recommendation, Churn Diagnostics, RFM Segmentation, Revenue Analysis

Experience

SAMSUNG — Sept 2024 – June 2025
Machine Learning Intern — Samsung PRISM Program (Remote, Bengaluru)
Project: Speech Super-Resolution for ASR Systems

- Developed an ECA-enhanced U-Net for speech super-resolution, achieving a **10.2% reduction in Word Error Rate (WER)** on LibriSpeech.
- Built end-to-end training, evaluation, and ablation pipelines for audio ML models with statistical comparisons.
- Worked extensively with **ASR, STT, and speech enhancement systems**, aligning models with production constraints.
- Improved experimental reliability by **15%** through optimized data pipelines and evaluation protocols.

Selected Projects

RAG Agent for Large-Scale Policy Documents (10K+ Docs) — [GitHub]

- Built a production-style Retrieval-Augmented Generation system using FAISS and ChromaDB.
- Implemented adaptive chunking and hybrid embeddings, achieving **92% retrieval accuracy**.
- Enabled semantic search, profiling, and grounded LLM responses over large document corpora.

Fine-Tuned Whisper ASR for Low-Resource Language — [GitHub]

- Fine-tuned Whisper on low-resource speech data, addressing multilingual ASR challenges.
- Designed efficient training workflows with augmentation, caching, and accelerated experimentation.

SQL Revenue Analytics & Customer Segmentation — [GitHub]

- Built SQL-based analytics pipelines for revenue diagnostics, churn analysis, and RFM segmentation.
- Translated analytical outputs into actionable insights for business decision-making.

Achievements

Peer-Reviewed Publications (3)

- [IEEE CICT 2023] — YOLOv8-Based Weed and Disease Detection
- [IJRS (Taylor & Francis) 2025] — Attention-Guided U-Net with ASPP for Change Detection
- [IEEE Access 2025] — SPSA-Optimized Random Forest for Remote Sensing Change Detection

Amazon ML Challenge 2025: Ranked **94 / 7000+ teams (Top 1.5%)**, improved SMAE from **47 → 43.7**.
Certifications: Intel AI Engineer Professional Certificate (Coursera) — Applied AI, ML Engineering

Additional Information

Preferred Location: Mumbai (On-site)
Leadership: Core Management Member, Google Developer Student Clubs, VIT Chennai
Interests: Predictive Analytics, GenAI Systems, Audio/Video AI, Data-Driven Decision Making