Jayraj Lakkad

Surat, Gujarat, India

+91-9081196686 jayrajlakkad85@gmail.com LinkedIn GitHub

SUMMARY

Driven final-year B.Tech CSE student with research experience in speech processing and deep learning. Contributed to three conference paper submissions (APSIPA ASC, PReMI 2025), delivering solutions for Neural Waveform Synthesis, Audio Deepfake Detection, and Emotion Suppression. Seeking research and development roles in speech processing, NLP, and related AI domains.

EDUCATION

Charotar University of Science and Technology **2022 – 2026 (Exp.)**

*B.Tech in **Computer Science and Engineering**, CPI: **9.10/10*** *Anand, Gujarat*

Ashadeep Vidyalaya & Ucchtar Madhyamik Shala, Science Stream **2019 – 2022**

*Class 10: **86.05%**, Class 12: **91.00%*** *Surat, Gujarat*

RESEARCH EXPERIENCE

Speech Research Lab, DA-IICT **June 2025 – July 2025**

Research Intern *Gandhinagar, India*

- Contributed to multilingual audio deepfake detection research (PReMI 2025 Selected), creating a VCTK-based dataset of interleaved real and synthetic English and Hindi speech using YourTTS and X-TTS. Achieved 60% detection accuracy on V3 and V4 datasets with ResNet-18, surpassing CNN (57%). Released dataset/code on GitHub.
- Developed novel emotion suppression pipeline for ASR (PReMI 2025 submission), using WORLD vocoder and EmoCycleGAN to map multiple emotions to neutral audio on RAVDESS. Reduced pitch variance by 82% and WER from 17.3% to 6.9% through preprocessing and training. Released sample on GitHub.
- Contributed to high-fidelity speech synthesis (APSIPA ASC 2025 submission), implementing non-autoregressive transformers with VITS and normalizing flows on LJ Speech dataset using NVIDIA GTX 1080. Optimized Mel-spectrogram generation for scalable waveform synthesis.

Indian Institute of Technology, Patna **June 2024 – July 2024**

Research Intern *Patna, India*

- Investigated federated learning for privacy-preserving ML under Dr. Rahul Mishra, using PySyft to simulate distributed training. Evaluated model performance across decentralized datasets.

PROJECTS

Multimodal Hate Speech Classification GitHub **2025**

- Designed audio-based hate speech classifier using Whisper for transcription and BERT embeddings with a custom CNN. Achieved high performance on internal dataset. Deployed via Gradio for real-time inference.

Sentiment Recognition System using Sound Input GitHub **2024**

- Developed emotion recognition system on RAVDESS dataset using Mel-spectrogram features with CNN and SVM classifiers. Achieved 84.6% accuracy (CNN) and 81.7% accuracy (SVM), with detailed F1-score analysis for model comparison.

POSITIONS OF RESPONSIBILITY

Charotar University of Science and Technology **June 2023 – July 2024**

Executive Central Councillor, Technical Coordinator, Eye Coders Club Coordinator *Anand, Gujarat*

- Led 3+ technical workshops and coding sessions, engaging numerous students to foster peer-led learning.
- Coordinated technical activities for CSE-CSPIT and Eye Coders Club, enhancing student skill development.

TECHNICAL SKILLS

Languages: Python, C++

Frameworks: PyTorch, scikit-learn, Gradio, Git

AREAS OF INTEREST

Machine Learning, Deep Learning, Speech Processing, Privacy-Preserving AI, Federated Learning, Emotion Recognition, Neural Vocoders, NLP, LLMs

ACHIEVEMENTS

Secured 2nd place in ImmunoQuest Kaggle Competition (team of 2, among numerous participants)

NPTEL Certified in Data Structures and Algorithms, Database Management Systems, Deep Learning (IIT Ropar)

Recipient of Tuition Fee Waiver Scheme (TFWS) Scholarship, Gujarat Government

Solved 600+ problems on LeetCode, 300+ on InterviewBit

Submitted three papers to APSIPA ASC, PReMI 2025 (accepted)