Kanchi Vedang

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HackerRank – hackerrank.com/profile/vedangkanchi

Summary

An enthusiastic and practical individual with experience in AI engineering, audio processing, deep learning, drone communication systems, and full-stack development. Skilled in speech recognition, diarization, and real-time systems with strong exposure to both academic research and industry use cases.

Work Experience

Data Science Intern, MetLife   Feb 2025 – May 2025

- Worked on audio processing, transcription, speaker diarization, and entity recognition.
- Implemented silence removal using PyDub in the preprocessing pipeline.
- Visualized audio using Librosa for frequency and amplitude analysis.
- Amplified audio segments with amplitudes below 20% of peak value.
- Explored DeepFilterNet for background noise suppression.
- Studied various VAD, noise removal, and silence detection techniques using MFCCs and GFCCs.
- Used Demucs for background noise separation in multi-speaker scenarios.
- Developed a diarization pipeline with VAD, speaker embedding extraction, clustering (K-Means, DBSCAN), and result generation.
- Used Whisper for multilingual transcription with pre/post-processing.
- Experimented with diarization libraries: Pyannote-audio, Resemblyzer.
- Tested VAD tools: WebRTC VAD, Silero-VAD.

Intern, IDEX-DIO (Defence Innovation Organization)   May 2023 – Jun 2023

- Developed Python scripts to communicate with drone flight controllers and obtain live parameters such as altitude and orientation using MAVLink.
- Engaged in technical and strategic discussions with army generals, commanders, and central government officials.

Education

B.Tech. in Computer Science and Engineering
SRM Institute of Science and Technology, Kattankulathur, Chennai, India
Aug 2021 – May 2025 (Expected)

Class XII, CBSE
Kendriya Vidyalaya, Waltair, Visakhapatnam, India
Aug 2019 – May 2021

Skills

Tools and Frameworks: TensorFlow, Keras, scikit-learn, pandas, NumPy, SciPy, Whisper, Librosa, Speech-Brain, Torchaudio, DeepFilterNet, Pyannote.audio, Demucs, Resemblyzer, Huggingface Transformers, OpenCV, WebRTC VAD, PyTorch

Cloud: AWS

Technical Expertise: Machine Learning, Deep Learning, Speaker Diarization, CNN-based classification, Audio Signal Processing, Clustering Techniques, Real-time Data Collection

Full-Stack Development: HTML, CSS, JavaScript, React, Flask, Django, FastAPI

Databases: MySQL

Networking and Protocols: TCP/IP, Mobile Networks, SSH, Serial Communication, MAVLink

Robotics and Embedded Systems: PX4 Autopilot, Pixhawk, Jetson Nano, PID Tuning, Mission Planner, WSL, Linux-based control systems

Developer Tools: Git, GitHub, VS Code

Soft Skills

Collaboration, Adaptability, Problem-solving, Communication, Self-motivation, Attention to Detail, Initiative, Continuous Learning

Achievements

- Secured internship at MetLife via "Code the Change" Hackathon (Top 7 selected out of 80+ onsite finalists).
- Participated in several district-level tennis tournaments.

Conferences

- **Amaravati Drone Summit (Oct 2024):** Engaged with drone technology founders; witnessed world-record drone light show.
- **ICCCT-2025, NFSU Goa:** Presented a research paper in collaboration with Florida International University.

Projects

- **Crack Detection using CNN:** Built a CNN-based classification model to detect cracks in surface images.
- **Fitness and Diet Tracker:** Developed a website using Flask for tracking fitness activities and diet plans.
- **Activity Booking App:** Built a slot-booking application for Gym, Swimming, HIIT, and Zumba.

Publications

- **AI-powered Drone Systems for Surface Painting and Cleaning**, ICCCT-2025

Certifications

- HackerRank Software Developer Certificate
- Advanced Drone Innovations (ADI) Certificate – organized by TiHAN (IIT Hyderabad) and NM-ICPS

Volunteering

Volunteer, Sri Sathya Sai Vidya Vihar, Visakhapatnam, India
Participated in a school Seva initiative distributing blankets, food, and essentials to old age homes.