Abhilash Nelapati

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Summary

Innovative Computer Science graduate with hands-on experience in **AI/ML, Speech Technologies**, and **Full-Stack development**. Proven expertise in fine-tuning ASR models, achieving **90%+ transcription accuracy**. Skilled in the **MERN stack** and dedicated to building inclusive, open-source AI solutions.

Education

B.Tech in Computer Science, Swarnandhra College of Engineering and Technology, Narsapuram — Nov 2021 – May 2025

Experience

AI Assistant Intern, Swecha Telangana — Jun 2024 – Sep 2024
- Developed a real-time voice assistant pipeline integrating **ASR (Whisper)**, **TTS**, and translation modules.
- Fine-tuned **Wav2Vec2** and Whisper models using **Hugging Face**, achieving **90%+ accuracy**.
- Engineered a **Flask-based dashboard** to visualize ASR analytics, improving debugging efficiency by **35%**, and optimized system latency via silence-detection modules while documenting modular AI architectures. .

Advanced AI Participant, IIIT-Hyderabad + Swecha — Jun 2024
- Developed a custom **Linux OS** and contributed to system-level open-source projects.
- Built full-stack applications using **React and Next.js** while exploring **LLaMA** interfaces.

Projects

AI Voice Assistant — Jun 2024 – Sep 2024
- Integrated **Whisper (ASR)** and **Tacotron (TTS)** for fluent, real-time speech interaction.
- Supported multilingual I/O and contextual understanding via **Hugging Face pipelines**.
- Optimized for **mobile compatibility** with a focus on privacy-aware data handling.

Learning Management System (Final Year Project) — Jan 2025 – Apr 2025
- Developed a scalable platform using the **MERN Stack** (MongoDB, Express, React, Node.js).
- Implemented secure authentication using **JWT and bcrypt** with role-based access control.
- Designed a responsive UI with **Tailwind CSS** and integrated real-time progress tracking.

JYOMARG – AI Career & Learning Ecosystem
- Developed a cyberpunk AI hub with **Gemini-powered** career guidance and automated 8-week learning roadmaps.
- Built a **Resume Architect** for automated PDF parsing, skill gap analysis, and intelligent JD mapping.
- Engineered a **FastAPI** backend with AI response caching and robust error handling for high-performance delivery.

Technical Skills

AI/ML Tools: Whisper, Hugging Face, Wav2Vec2, ChatGPT.
Programming: Python, JavaScript, HTML5/CSS3, SQL
Web Tech: React.js, Node.js, MongoDB, Express.js, Flask, Render, Tailwind CSS.
Tools: Git, GitHub, GitLab, Linux, VS Code.

Certifications

Python Programming :– Purple Technology
Web Development :– Eduskills
JavaScript Essentials :– Cisco Networking Academy
AI-ML Virtual Internship :– Eduskills