

# Sofi Altamsh Shah Machine Learning Engineer

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## Professional Summary

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Machine Learning Engineer with 2+ years experience in LLMs, speech/audio ML using Whisper/torchaudio, and RAG. Skilled in fine-tuning models, optimizing inference, and building scalable ASR/TTS pipelines. Delivered production ML systems, reducing QnA response time by 92% and improved hiring rate by 23%.

## Experience

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### Machine Learning Engineer, *Masai*

01/2025 – present | Bengaluru

- Built an automated **multilingual audio-generation** pipeline that converted recorded sessions into five languages using ASR, translation, and TTS models, reducing manual effort by over **80%**.
- Designed and built multi-stage **RAG + AI-agent pipelines** using LangChain for intent extraction, context retrieval, and automated support ticket responses.
- Built a RAG-based answering system for recorded sessions, reducing query time by **92% ( $\leq 3.2s$ )**. Improved student hiring rate by **23%** using a CTC prediction model. Trained and deployed to production.

### Data Analyst Associate → Data Research Analyst, *Masai*

04/2024 – 01/2025 | Bengaluru

- Build data pipelines by analyzing the job market data from (LinkedIn, Naukri, Instahyre), delivering insights that improved placement rates by **15%**. Analyzed trends and built dashboards.

### Data Science Intern, *1Stop.ai*

06/2022 – 11/2022 | Bengaluru

- Trained predictive models for house-loan value achieving more than **90% accuracy**, enhanced performance using **PCA**, and built insight dashboards with clustering visualizations.

## Technical Skills

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**Audio & Speech ML:** Whisper, torchaudio, librosa, MFCCs, VAD, augmentation, noise filtering

**Machine Learning:** Regression, Clustering, PCA, XGBoost, Feature Engineering, Hyperparameter Tuning

**Deep Learning:** CNN, RNN, GANs, Transformers (RoBERTa, T5, GPT), LoRA

**NLP & LLMs:** Prompt Engineering, RAG, Text2Text, NER, NLTK, Hugging Face, Fine-Tuning, LangChain

**MLOps:** Streamlit, Flask, HDFS, AWS Lambda, Vector Databases (FAISS), MySQL, MongoDB, Docker

**Libraries & Frameworks:** NumPy, Pandas, TensorFlow, PyTorch, Scikit-learn, SciPy, OpenCV, OCR

**Visualization:** Power BI, Matplotlib, Seaborn, Excel, Metabase

## Projects

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### Multilingual Speech-to-Text Enhancement

- Fine-tuned Whisper using **torchaudio preprocessing and audio augmentation** on English-Hindi data
- Achieved **22% WER reduction** and optimized real-time inference with FP16 and caching

### Fake News Detection Using Multi-Modal Learning

- Built a hybrid multimodal model (RoBERTa + CNN) for fake news detection, achieving **88.7% accuracy** on a 10K+ sample dataset using PyTorch & Hugging Face.

### Face Mask and Emotion Detection System

- Built a **real-time image pipeline** with **94.6% accuracy** on **1,500+ images** using TensorFlow and OpenCV

## Education

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**B.Tech in Computer Science and Engineering,**  
*Government College of Engineering Aurangabad (8.1 CGPA)*

2019 – 2023