

DARSHIL SHAH

Machine Learning Engineer

📞 +91 8866775000 ✉️ shahdarshil97@gmail.com 🔗 linkedin.com/in/-darshil 🌐 darshil.in

EXPERIENCE

VISA Inc.

June 2025 – Present

Data Scientist | Python, SQL, Pandas, Machine Learning, LLM, RAG, OpenAI API

Bangalore

- Built **Langchain powered Customer 360 Dashboard** using **Retrieval-Augmented Generation (RAG)** and **OpenAI GPT-4.1** enabling natural language queries for user profiling and segmentation to answer business queries eliminating SQL querying.
- Built scalable **Name Matching** pipeline to search billions of vendor records with spelling errors/abbreviations by **fine-tuning Sentence BERT with triplet loss** and applying fuzzy match only on top-K candidates — improving query latency.

PayU Payments Pvt Ltd

Jan 2023 – June 2025

Data Scientist | Python, SQL, Pandas, Machine Learning, NLP, AWS, EC2

Bangalore

- Trained & deployed CatBoost based Machine Learning model for **Lead Prioritization** to identify premium quality leads for online Used-Car Reseller & Online Gaming Platform. Achieved **3.7x Lift** & **2.1x Lift** respectively.
- Developed an Income Estimation solution using SMS by leveraging **BERT** for **Name Entity Recognition (NER)** to extract **amount** and classify SMS as Debit or Credit, boosting accuracy by **2.8%** and coverage by **35%** over traditional methods.
- Built **Early Claim Prediction** model to identify risky customers making early claim in Life Insurance **3.4x Lift**.
- Designed & developed a framework to predict Propensity-to-Purchase in the next month using machine learning model for Grocery, Food, Fashion & other industries. With mean model performance of **92.7% AUC & 65 KS**.
- Served as Single Point of Contact to 25+ clients and delivered successful POCs.

Jekson Vision Pvt. Ltd

June 2019 – Aug 2020

Image Processing Engineer | Python, C++, SQL, TensorFlow, OpenCV, Deep Learning, CUDA, GPU

Ahmedabad

- Optimized Tablet Inspection System (TIS) using Computer Vision on GPU and increased the inspection speed by **39%**.
- Enhanced the Tablet Inspection System (TIS) using Deep Learning algorithms, achieving **7%** increase in accuracy.

PUBLICATIONS

1. Deep Learning based EEG Analysis using Video Analytics

October 2022

Accepted to 29th IEEE International Conference on Image Processing (ICIP), 2022.

2. Multi-dimensional Analyses (1D, 2D and 3D) of EEG using Traditional Methods and Deep Learning

July 2022

Accepted to Frontiers in Signal Processing, Biomedical Signal Processing, 2022.

3. Analysis of EEG for Parkinson's Disease Detection

July 2022

Accepted to 14th IEEE International Conference on Signal Processing and Communications (SPCOM), 2022.

4. VCA-Net: Visual Creativity Analysis using Deep Neural Network

May 2022

Accepted to 13th ACM Indian Conference on Computer Vision, Graphics & Image Processing (ICVGIP), 2022.

PROJECTS

AI-Based Multimodal Reel Classification | Python, Gemini API, FAISS, PyTorch, Sentence-Transformer

- Developed an AI-based reel classification model to categorize Instagram content using audio transcripts and captions.
- Applied Whisper for speech-to-text and Gemini API for zero-shot hierarchical text classification through prompt engineering.
- Implemented semantic similarity search using FAISS and Sentence-Transformers embeddings to search reels with filters.

Address Standardization using IndicBART | Python, PyTorch, HuggingFace, LLM, AWS Sagemaker

- Developed a Indian Address Standardizer supporting multiple Indian languages to parse and structure unstructured addresses.
- PEFT based LoRA fine-tuned IndicBART LLM to identify key address components (House No., Locality, City, Pincode). Enhanced the solution to correct spelling errors, and complete partial addresses.

EEG Videos and Feature Maps Classification | Python, Tensorflow, Scikit-Learn

- Converted EEG time-series data to Spatio-temporal info preserving EEG Videos and EEG feature maps.
- Designed Convolution Neural Network (CNN) based model architecture for EEG Video & Feature Maps Classification.
- **3.27%, 1.31% & 3.11%** improvement in accuracy for EEG Baseline, Mental Arithmetic & Parkinson's Disease datasets.

EDUCATION

International Institute of Information Technology - Bangalore

Aug 2020 – Jan 2023

Master of Science in IT (Specialization: Data Science, Machine Learning, Deep Learning)

3.78

Institute of Technology - Nirma University

June 2015 – June 2019

Bachelor of Technology in Instrumentation and Control

3.78

TECHNICAL SKILLS

Languages: Python, SQL

Machine Learning Frameworks: PyTorch, Tensorflow, LangChain, Pandas, HuggingFace, PySpark, OpenCV, Git

Generative AI & APIs: OpenAI API, Gemini API, Claude API, Ollama, Retrieval-Augmented Generation (RAG), Prompt Engineering

Expertise: Machine Learning, Deep Learning, NLP, LLM fine-tuning, Computer Vision, AWS (EC2, Sagemaker)