

VIVEK PRAJAPATI

Machine Learning Engineer

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[LinkedIn](#) | [GitHub](#) | [Kaggle](#)

Professional Summary

- Machine Learning Engineer with 3+ years of experience building and deploying end-to-end solutions across Deep Learning, NLP, and Generative AI.
- Built and deployed production-grade AI solutions—ranging from AI content detectors to smart assistance platforms, real-time data pipelines, APIs and RESTful services.
- Skilled in training, optimizing, and integrating cutting-edge models using Transformers and PyTorch, and deploying cloud-native ML workflows via AWS, Docker, and GitHub Actions.
- Comfortable working on Large Language Models, Computer Vision, and ML tasks, with a strong focus on performance, scalability, and business-focused AI outcomes.

Technical Skills

- **Languages & Frameworks:** Python, JavaScript, FastAPI, Flask, Streamlit, Object-Oriented Programming
- **ML/AI & LLMs:** HuggingFace Transformers, OpenAI API, LangChain, CrewAI, PyTorch, TensorFlow, Keras, Scikit-learn, XGBoost, LightGBM, LSTM, BERT, GPT, Prompt Engineering, RAG Pipelines, NL2SQL, OCR, Cohere, Anthropic Claude, Tools and Agents, Function Calling
- **Data Engineering & Automation:** Pandas, NumPy, SciPy, NLTK, Matplotlib, Seaborn, Selenium, Data Collection, Web Scraping, Cleaning & Preprocessing, Feature Engineering, GitHub Actions, Redis + RQ
- **Web & Multimedia:** OpenCV, MoviePy, Librosa, Wav2Lip, ElevenLabs API
- **Databases & Search:** SQL, MongoDB, MySQL, Elasticsearch, ChromaDB, Pinecone, FAISS
- **Cloud & DevOps:** AWS (Lambda, S3, Bedrock, Secrets Manager, SageMaker), Microsoft Azure, Databricks, Git & Version Control, Docker

Key Projects

AI Content Detection Tool | The Tensors

- Trained a high-accuracy model using *deberta-v3-large* to distinguish AI-generated text from human-written content across domains like news, reviews, blogposts etc.
- Curated a diverse training dataset by aggregating and cleaning human-authored and LLM-generated texts from trusted public sources like PubMed, BNC, and WebText, used advanced prompt engineering to synthesize AI content.
- Achieved 92% F1-score and under 5% false positives on cross-domain benchmark datasets, demonstrating strong generalization performance.
- Tech Stack: Python, HuggingFace, PyTorch, OpenAI API, Pandas, Scikit-learn

Smart Assistance Platform | Noble Patriarch Technologies

- Designed and implemented a smart chatbot/assistance platform leveraging AWS services and state-of-the-art NLP techniques.
- Built a serverless ingestion pipeline using AWS Lambda, Bedrock, and ChromaDB to index and retrieve content from S3-hosted documents.
- Integrated RAG-based querying with Bedrock LLMs for contextualized document-level responses.
- Implemented secure chat history storage and metadata-driven, role-based access to retrieved documents using MySQL.
- Tech Stack: Python, AWS Lambda, S3, Bedrock, Secrets Manager, ChromaDB, MySQL, LangChain, Cohere embeddings, Docker.

Bitcoin Mailing List Scraper & Summarizer | Freelance

- Engineered a scalable pipeline to collect, process, and summarize long-form technical discussions from prominent Bitcoin developer forums, for sending weekly newsletters to the community.
- Automated ingestion via GitHub Actions + cron; stored in Elasticsearch.
- Automated summarization using GPT-4, integrated into a newsletter system via XML updates.
- Implemented topic modeling & vector embeddings to power RAG workflows & semantic document retrieval.
- Tech Stack: Python, OpenAI API, Elasticsearch, GitHub Actions, Topic Modeling (NLP), XML

AI Humanizer Tool | The Tensors

- Fine-tuned GPT-4o-mini on minimal human-authored samples (as few as 10–15) to create a Humanizer that can bypass leading AI content detection tools.
- Bypassed up to 90% of Humanized-text on Originality.ai (AI content detector) with as few as 25 human-written samples.
- Tech Stack: Python, OpenAI API (notebook-based fine-tuning), Pandas, NumPy

AI-Driven Sales Pitch Tool | Freelance

- Created a video generation platform to deliver personalized sales pitches with lip-synced presenters and AI-generated voices.
- Used Wav2Lip for realistic lip-sync and ElevenLabs for dynamic audio.
- Customized video template showed client websites and names for tailored outreach.
- Helped client send over 100+ custom sales videos, improving engagement and lead response rates.
- Tech Stack: Python, Flask, Wav2Lip, ElevenLabs API, Redis + RQ, OpenCV, MoviePy, Docker

Work Experience

Machine Learning Engineer

The Tensors | Gujarat India

(June 2024 – Present)

Full-time | Remote

- Leading the development of scalable ML systems and RAG-based chatbots using AWS-native architecture, LLMs, and real-time data pipelines.
- Mentoring interns, reviewing code, testing, debugging, documenting, and maintaining complex applications.

Software Developer (Data Science)

Noble Patriarch Technologies

(Apr 2023 – Apr 2024)

Contract | Remote

- Designed and deployed custom AI workflows and RAG chatbots while collaborating with multiple clients
- Reduced document retrieval latency by 40% using ChromaDB and optimized embedding pipelines.

Machine Learning Engineer

Freelance

(May 2022 – Mar 2023)

Contract | Remote

- Delivered full-stack ML solutions in various projects including IoT data pipelines, behavioral monitoring dashboards, and deepfake-based video outreach tools.

Machine Learning Engineer

TechExcel Ltd. | Gujarat India

(Oct 2021 – Mar 2022)

Full-time | Remote

- Developed an end-to-end e-commerce chatbot using Rasa for intent classification, dialogue management, and entity extraction.
- Achieved 85%+ intent accuracy on customer queries and integrated live chat via a REST API.

Machine Learning Intern

TechExcel Ltd. | Gujarat India

(Apr 2021 – Sep 2021)

Internship | Remote

- Contributed to training data creation, intent labeling, and entity annotation for 10+ user intents using Rasa NLU.
- Gained hands-on experience with NLP pipeline design, chatbot testing, and deploying locally with Docker.

Top Certifications

- **Udemy:** Complete Generative AI Course with LangChain and HuggingFace, PyTorch Deep Learning Bootcamp, Computer Vision with OpenCV and Deep Learning
- **Coursera:** TensorFlow Developer Specialization, Natural Language Processing Specialization, Deep Learning Specialization, Machine Learning Specialization, Mathematics for ML, Python Specialization

Education History

- Bachelor of Engineering – Mechanical
Gujarat Technological University, 2021 – CGPA: 8.19
- Diploma of Engineering – Mechanical
Gujarat Technological University, 2018 – CGPA: 7.96
- Class XII – Science (PCM)
Jawahar Navodaya Vidyalaya, 2015