

Jay Shah

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SUMMARY

Machine Learning Engineer with hands-on experience building end-to-end ML pipelines, LLM-powered applications, and containerized model deployments. Strong Python foundation with practical exposure to RAG systems, deep learning, vector search, and REST API serving via FastAPI. Experienced with Docker, AWS, and Git-based workflows. Eager to grow in MLOps, cloud-based ML infrastructure, and production-grade AI systems.

EDUCATION

B.Tech in Computer Engineering

2022 – 2026

Charotar University of Science and Technology • India

- Coursework: Machine Learning, Deep Learning, Natural Language Processing, Computer Vision, Data Structures & Algorithms, Software Engineering

EXPERIENCE

R&D Intern

Jan 2026 – Present

STPL • Surat, India

- Developed applied ML prototypes for structured tabular and image-based datasets using Scikit-learn and Python, reducing manual labeling effort.
- Built modular data preprocessing pipelines (feature engineering, normalization, augmentation) reusable across multiple experiments.
- Documented model evaluation results and maintained reproducible experiment logs using version-controlled notebooks.

PROJECTS

RAG-based Quiz Generation System

Oct 2025 – Dec 2025

Python • LLM API • FAISS • FastAPI • Docker

- Built a production-ready Retrieval-Augmented Generation (RAG) pipeline that processes study materials and auto-generates quiz questions using a language model API with structured prompt templates for reliable, parseable JSON output.
- Implemented document ingestion, text chunking, sentence-transformer embeddings, and FAISS vector store for semantic retrieval of lecture content, indexing over 1,200 pages of study material across 300+ chunks.
- Applied structured prompt engineering for production reliability – prompts return schema-validated JSON consumed by downstream automation rather than free-form text, achieving a 95% valid-JSON parse rate on first attempt. Served the pipeline as a REST API using FastAPI.

AI Resume Analyzer

Sept 2025

Python • NLP • FastAPI • Scikit-learn

- Built an NLP pipeline to extract skills, education, and experience from resumes using spaCy and regex-based entity recognition; exposed results via a REST API endpoint built with FastAPI, tested on a dataset of 500+ sample resumes.
- Implemented a job-description matching mechanism using TF-IDF and cosine similarity to score and rank resumes against role requirements, improving match relevance by approximately 20% over keyword-only matching.

SAR Image Colorization – Smart India Hackathon

Aug 2025

PyTorch • GANs • TensorFlow

- Designed and trained a conditional GAN (pix2pix architecture) to colorize Synthetic Aperture Radar images on a curated dataset of 15,000 paired images; implemented custom paired image alignment, augmentation, and normalization for stable adversarial training.
- Managed the full ML lifecycle: data pipeline → model training → checkpoint management → inference evaluation, achieving 98.89% accuracy along with strong SSIM and visual quality scores.
- Optimized batch processing and GPU memory utilization to reduce training time by ~30% through gradient accumulation and mixed-precision training.

EV Management System – PDPH Hackathon (White Carbon)

2024

Node.js • REST APIs • GPS

- Secured 2nd Runner-Up among 50+ teams; implemented geo-fencing features using real-time GPS data streams and designed secure RESTful backend APIs for system integration.

TECHNICAL SKILLS

Languages: Python, SQL, C++, Java, JavaScript

ML / DL: Scikit-learn, TensorFlow, PyTorch, Keras, HuggingFace Transformers

LLM & RAG: LLM API integration, Prompt Engineering, RAG pipelines, FAISS, ChromaDB, LangChain, LangGraph

MLOps & Serving: FastAPI, MLflow (experiment tracking), Docker, model packaging & inference optimization

Cloud & DevOps: AWS (EC2, S3), Git, GitHub Actions (CI basics), REST API design

Data & Backends: MongoDB, Node.js, Express.js, Next.js, web scraping (BeautifulSoup / Scrapy)

CERTIFICATIONS

- AI & Data Science – SAP, CODE Unati, Edunet (Python, AI, Data Analytics)