

SHRUTI PATEL

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Summary

Aspiring AI/ML Engineer with experience in Machine Learning, Deep Learning, and Generative AI. Built end-to-end ML pipelines, RAG-based systems, and transformer-powered applications using modern AI frameworks and vector databases. Strong foundation in Data Structures Algorithms, software engineering, and model optimization, with proven experience through open-source contributions and real-world AI projects.

Education

B.E. in Computer Science & Engineering (Data Science)	2023 – Present
<i>Vishwakarma Government Engineering College, Chandkheda</i>	<i>CGPA: 9.48/10</i>
Class XII (GSEB)	2023
<i>Sheth Shree I N Swaminarayan Vidhyalay, Ahmedabad</i>	<i>93.31 Percentile</i>

Skills

Programming Languages: Python, C++, Java, JavaScript (ES6+), SQL

Machine Learning: Supervised Learning, Unsupervised Learning, Classification, Regression, Ensemble Methods, Feature Engineering, Model Evaluation

Deep Learning: Neural Networks, CNNs, RNNs, LSTMs, GRUs, Attention Mechanisms, Transformers

Generative AI: Large Language Models (LLMs), Prompt Engineering, Retrieval-Augmented Generation (RAG), Fine-Tuning, Embeddings, Vector Databases (FAISS, ChromaDB)

Libraries & Frameworks: TensorFlow, Keras, Scikit-learn, LangChain, FastAPI, NumPy, Pandas, Matplotlib, Seaborn

Databases: MySQL, MongoDB

Developer Tools: Git, GitHub, Jupyter Notebook, Google Colab, VS Code

Projects

AeroCare — Aircraft Engine Maintenance System [GitHub](#) | *Python, TensorFlow/Keras, BiLSTM, GRU, CNN, Attention Mechanisms*

- Proposed a novel GEBiLSTM-Attn architecture integrating CNN, GRU, BiLSTM, gated feature enhancement, and attention mechanisms for Remaining Useful Life (RUL) prediction on NASA CMAPSS datasets.
- Achieved R^2 scores of **0.8726 (FD001)**, **0.8346 (FD002)**, **0.8893 (FD003)**, and **0.8355 (FD004)**, outperforming baseline sequence models.
- Implemented an end-to-end deep learning pipeline covering preprocessing, sequence generation, training, hyperparameter optimization, and evaluation using MAE, RMSE, and R^2 metrics.

DriftGuard — Real-Time ML Data Drift Detection System [GitHub](#) | *Python, XGBoost, LightGBM, FastAPI, Streamlit, SciPy*

- Developed a production-oriented data drift monitoring platform using Kolmogorov–Smirnov testing to monitor 284K+ transactions and detect distribution shifts across 8 critical features.
- Benchmarked 5 machine learning models and deployed an XGBoost fraud detection model achieving an AUC of 0.977.
- Integrated 3 FastAPI endpoints and an interactive Streamlit dashboard for real-time fraud prediction, drift detection, and automated retraining alerts.

RAG-Powered Financial Copilot [GitHub](#) | *Python, LangChain, ChromaDB, RAG, Gemini, Pandas*

- Engineered an end-to-end RAG pipeline supporting PDF and CSV ingestion, semantic retrieval, and natural language financial analysis using Gemini embeddings and ChromaDB.
- Architected a dual-knowledge vector store integrating 2 knowledge sources—transaction data and finance-domain guidance—to generate grounded financial recommendations.
- Developed a financial analytics engine generating 5+ financial metrics, including spending totals, category breakdowns, monthly averages, savings insights, and health scores.

Experience

Open Source Contributor **Feb 2026 – Mar 2026**

Ak-dskit (Winter of Code 2026)

- Enhanced EDA and feature engineering utilities for an open-source PyPI machine learning library, improving data preprocessing workflows.
- Delivered production-quality contributions through pull requests, code reviews, and issue resolution with project maintainers.

Open Source Contributor **Jul 2025 – Oct 2025**

GirlScript Summer of Code 2025

- Contributed to 5+ open-source repositories, with multiple merged pull requests and a Certificate of Appreciation.

Awards & Achievements

- **Research Publication (Scopus Indexed, Accepted, 2026):** Paper titled “Adaptive Gated Ensemble BiLSTM with Attention (GEBiLSTM-Attn) for Aero-Engine RUL Prediction” accepted for publication in JETIA International Journal.
- **AMD Hackathon 2026:** Top 10 Teams.
- **GTU STEMSpire 2026:** Finalist in GTU Innovation Competition.
- **Odoo Hackathon 2025:** Finalist (Top 250/19,000+ teams).
- **Smart India Hackathon 2025:** Finalist.
- **Dewang Mehta IT Award (2024):** Academic Excellence Award in GTU.