

# Vashishth Raval

Data Scientist | Machine Learning Engineer

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## Skills

- **Programming & Systems:** Python (NumPy, Pandas, Scikit-learn), SQL (CTEs, Window Functions)
- **Statistical Analysis:** A/B Testing, Experimental Design, Hypothesis Testing, Bias-Variance Tradeoff, Confidence Intervals
- **Machine Learning:** Supervised & Unsupervised Learning, Cross-Validation, Feature Engineering, Ensemble Methods, Imbalanced Learning, Hyperparameter Optimization, Model Evaluation
- **Deep Learning:** Neural Networks, Representation Learning, Transformers, Fine-Tuning
- **Generative AI:** RAG, LangChain, LangGraph, Multi-Agent Systems, Vector Databases
- **MLOps:** MLflow, Git, DVC, Docker, CI/CD

## Projects

### TradeMind Pro | Multi-Agent Financial Intelligence System

[GitHub](#) | [Video](#)

- Automated institutional-grade hedge and mutual fund research workflows by engineering a multi-agent RAG system (Bull/Bear/Judge) using Mistral-7B-Instruct with LangGraph orchestration, real-time news ingestion, BGE embeddings, and FAISS for structured, evidence-backed adversarial investment analysis.
- Improved auditability of stochastic LLM outputs by implementing deterministic score aggregation and deploying a FastAPI service to deliver transparent BUY/HOLD/SELL decisions (API latency: 8.46 s).

### InvestWise | Hybrid Mutual Fund Recommendation Engine

[GitHub](#) | [Video](#)

- Designed a hybrid recommender to help investors navigate 4,000+ mutual funds by combining K-Means clustering for segmentation and LightGBM for personalized risk profiling (Silhouette score: 0.42).
- Enhanced model transparency and trust by engineering financial risk indicators and integrating SHAP explanations into a FastAPI backend for real-time recommendations (API latency: 322 ms,  $R^2$ : 0.9513).

### YouTube Sentiment AI | MLOps & Influencer Analytics Platform

[GitHub](#) | [Video](#)

- Built an end-to-end NLP pipeline to extract scalable sentiment insights from noisy comment streams using preprocessing, class balancing, and experiment tracking via DVC, MLflow, and Optuna (Macro F1: 0.94).
- Enabled real-time content moderation by developing a Chrome extension and backend API for live sentiment and controversy scoring (API latency: 317 ms, Accuracy: 0.936).

## Work Experience — 2 Years 6 Months

### Bankai Infotech Ltd

Jan 2023 – Jun 2025

Associate Business Analyst

Ahmedabad, Gujarat

- Analyzed 200M+ financial transactions ( \$90B in total value) and large-scale operational datasets across multiple leading African banks to support churn reduction and cross-sell strategy initiatives.
- Built executive dashboards and analytical reports for CXO-level stakeholders, enabling data-driven strategic and revenue-impacting decisions.
- Translated ambiguous business requirements across Wallet and Agency Banking platforms into structured PRDs, KPIs, and analytical frameworks aligned with business objectives.
- Defined data-backed acceptance criteria within Agile delivery cycles, reducing rework by 30% and improving overall release quality.

## Education

Praxis Tech School | PGD in Data Science & AI (7.59/8.00)

Bengaluru, KA | 2025 – Present

Dhirubhai Ambani University | M.Sc. in Data Science (7.74/10.00)

Gandhinagar, GJ | 2021 – 2023

Charusat University | B.Tech in Electrical Engineering (7.32/10.00)

Anand, GJ | 2016 – 2020

## Achievements & Certifications

- |   |                        |  |                        |
|---|------------------------|--|------------------------|
| • Applied DS Lab, WorldQuant University | <a href="#">[Link]</a> | • Certified Banking Domain Professional  | <a href="#">[Link]</a> |
| • LoR (AI & ML), Dr. V. Parapathy, IITB | <a href="#">[Link]</a> | • Certified Scrum Product Owner (CSPO)   | <a href="#">[Link]</a> |
| • Unsung Hero Award, Bankai Infotech    | <a href="#">[Link]</a> | • National Player, AIU Table Tennis 2019 | <a href="#">[Link]</a> |