

Sayali Pingle

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EDUCATION

Duke University

Aug 2023 – May 2025

MS in Statistical Science

Durham, NC

- Courses: Predictive Modelling, Bayesian and Inferential Statistics, ML, Deep Learning, Hierarchical Modelling, SQL
- Teaching Assistant: POLSCI 671- Applied Bayesian Models, STA 101 - Statistical Inference, COMPSI 370 - Intro to AI

Narsee Monjee Institute of Management Studies (NMIMS)

Jul 2019 – May 2022

BS in Applied Statistics and Analytics

Mumbai, India

- GPA: 3.81/4; Courses: Hypothesis Testing, Machine Learning, Product Analytics, Time Series Analysis, Visualization

WORK EXPERIENCE

Chess Tutor AI

Aug 2024 – Present

AI Engineer

Remote, USA

- Built LLM- Agentic RAG model with Langgraph and Deepseek to give Grandmaster level insight for 1K+ monthly users.
- **Optimized prompts** with a modularized DSPy framework, incorporating Bootstrap Few-shot and chain-of-thought reasoning, resulting in a 35% improvement in response quality. **Implemented testing framework using Pytest.**
- Researched and developed chess-specific evaluation metrics (e.g., strategic depth, threat awareness) and deployed a holistic **evaluation pipeline to assess performance** for response relevance and quality.
- **Analyzed user data** and tailored responses to ELO ratings and play styles, achieving 15% increase in user satisfaction.

Fidelity Investments

Jun 2024 – Aug 2024

Data Science Intern

Durham, NC

- Developed 'Marble Chat'- **Retrieval Augmented Generation (RAG)** ChatBot to **aid in business decisions** and **detect profitable investment options** using LlamaIndex, saving 100+ hours of manual analysis with 0.5 sec of response time.
- Built an **automated data mining pipeline** for 20+ websites for real-time financial data ingestion. **Improved text data extraction accuracy** by 30% using prompt optimization and parser customization to **handle unstructured data**.
- Independently **deployed an end-to-end scalable production pipeline** to the **cloud** using **Microsoft Azure** and Docker.

Pangea Tech Solutions

Jun 2022 – Jun 2023

Data Science Consultant at Aditya Birla Group

Bengaluru, India

- Engineered a **large-scale supply chain analytics** dashboard processing 30,000+ rows daily to **monitor and forecast operations** real-time, develop KPIs and **enhance business performance**, **saving \$75M in operational costs** annually.
- **Streamlined Transport Efficiency** by optimizing delivery truck routes leading to 10% reduction in carbon emission.
- Implemented XgBoost to forecast truck delivery time (92.5% accuracy) reducing mean off-loading wait time by 10 hr.
- **Automated routine tasks** by **creating Python scripts for Data Quality and Data Validation** checks reducing 8 hr work to 10 min runtime. **Debugged and managed Data Pipelines** with the Data Engineering team on Databricks.
- Fostered collaborative communication & **presented data-driven recommendations to clients** and service providers.

SKILLS

- **Languages:** Python, R, SQL, Spark, C, C++, Git
- **Libraries:** Pytorch, LlamaIndex, Langchain, Pandas, Numpy, Streamlit, Bs4, DSPy, Ggplot, RShiny, Pytest
- **Software:** Databricks, AWS S3, Microsoft Azure, GitHub, Power BI, Tableau, Redshift, PostgreSQL, Snowflake, SAS VA

PROJECTS

Singapore Traffic Analysis by Object Detection, Duke University

- Created [HuggingFace dataset](#) with 700K+ traffic camera images; Gathered data using YOLOv8 for vehicle detection and classification. Conducted **A/B testing** on seasonal truck activity near Singapore's marine areas for alpha signal research. Deployed story-telling dashboard with in depth statistical modeling of **long and short-term traffic patterns**.

Groove with Data: Analysing Spotify Artists with RShiny, Duke University

- RShiny Dashboard for dynamic exploration of music artists integrating Spotify API providing in depth music analysis.

[PeakPlanner](#)- Health-Informed Task Scheduler, Duke University

- LLM-based scheduler integrating Apple Health & Calendar data to optimize daily routine and automate task priority.