Ankit Ashok

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EDUCATION

Birla Institute of Technology and Science (BITS), Pilani — Hyderabad, India
Dual Major in B.E. Mechanical Engineering and M.Sc. Mathematics — 2019 - 2024
Cumulative GPA: 7.8/10

Relevant Coursework: Linear Algebra (MATH II), Statistical Inference and Applications, Numerical Analysis, Optimization, Applied Statistical Methods, Artificial Intelligence for Robotics, Data Structures and Algorithms.

WORK EXPERIENCE

Analyst, Deloitte USI — Hyderabad, India
Aug 2024 - present

- Engineered a production-grade data ingestion pipeline that ingested Parquet files from source systems into AWS S3 buckets, pushed Change Data Capture (CDC) events to SQS queues, and orchestrated Lambda–Glue workflows to clean and load data into AWS RDS, **reducing manual data preparation by 80%** and enabling **real-time availability for agent-driven insurance workflows.**
- Built **agents** using **LangGraph** to handle complex insurance claims dynamically by integrating regulatory logic and **pipeline-driven source data** in collaboration with SMEs and stakeholders, enabling real-time, compliant claims processing at scale.
- Designed **agentic workflows leveraging AWS Bedrock and multimodal OCRs** to process insurance claims for a variety of document types, **cutting operational workload by 90%.**
- Enhanced a GenAI-powered business glossary tool with **RAG-based** context retrieval, data quality generation and anomaly detection, **improving data-driven decision making for 20+ clients.**

Data Science Intern, Genpact — Bengaluru, India
Feb 2024 – Jul 2024

- Collaborated with client-side managers of a prominent media company to adapt and validate machine learning pipelines using Python and R for **2 new regions**, enhancing predictive accuracy and business insights.
- Optimized market mix modelling workflows by automating post-processing tasks in Python, **reducing manual intervention by 70%**, saving the team approximately **10 hours per week**.

Quant Intern, Futures First — Gurgaon, India
Jul 2023 – Dec 2023

- Introduced an **LSTM-based model** for pre-macroeconomic data trading, delivering a **30-second execution edge with 70% directional accuracy.**
- Developed time series (SARIMA, ARIMAX) and calibrated stochastic interest rate models (Hull-White, CIR) using MLE & Monte Carlo, **reducing RMSE by 80%** across various interest rate scenarios.

Research Intern @ TavLab, Indraprastha Institute of Information Technology — New Delhi, India
Jun 2022 – Oct 2022

- Analysed the entropy data of **BERT** and w2v embeddings of spike protein sequences of COVID-19 using line plots, boxplots and detrended cross-correlation analysis in Python, R and Excel and predicted case surges using Random Forest with **an R2 value of 0.75.**

PROJECTS

Prediction of High Temperature Deformation Behaviour of β-Titanium Alloy using Various Machine Learning Approaches [Repo Link] — Jan 2023 - Jul 2023

- Implemented a Machine Learning workflow involving data cleaning, hyperparameter optimization and result validation in Python to study the flow stress of β-Titanium Alloy and found the most effective model, XGBoost with a **MAPE of 3.18%** and compared its performance to a physical mathematical model.

Catering Robot Simulation [Repo Link] — Sept 2022 - Dec 2022

- Optimised the spacing of a restaurant-like environment for the motion of a robot by implementing FastSLAM and D* Lite algorithms in Python and presented it graphically along with a simulation of the robot's motion using a box2d and matplotlib based physics environment.

TECHNICAL SKILLS

- Programming Languages: Python, SQL, R
- Libraries and Frameworks: NumPy, pandas, Matplotlib, scikit-learn, TensorFlow, PyTorch, LangChain, LlamaIndex, OpenAI, Anthropic, LangGraph
- Big Data, Querying and VectorDB: PySpark, PostgreSQL, MySQL, Milvus, Pinecone
- Cloud & MLOps: Azure - (ML, Functions, Blob Storage, DevOps), AWS - (Sagemaker, Bedrock, Lambda, Glue, S3, EC2, SQS, DynamoDB)
- Tools & Version Control: Git, Docker, Microsoft Excel, PowerBI

ADDITIONAL

- **Certifications:** Microsoft Certified: (Azure Data Scientist Associate, Azure Fundamentals), AWS Certified AI Practitioner.
- **Publication:** Ashok, A. et al. (2023) 'Strength and Fracture Energy Dependence of Additively Manufactured Polymer Parts on Build Orientation, Density, and Layer Thickness', in IMECE2023. Volume 4: Advanced Materials: Design, Processing, Characterization and Applications; Advances in Aerospace Technology. Available at: https://doi.org/10.1115/IMECE2023-112241.