Rajat Joshi

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Work Experience

Senior Data Scientist *January '25 - Present*
Amazon Web Services(AWS) *Bangalore*

- **Tech Stack** : AWS, ECS-Fargate, TypeScript, Bedrock, SageMaker
- **MLOps Platform**
  - Built the MLOps platform for AWS Central Support Science team from scratch using AWS CDK which employs ECS-Fargate service to launch individual batch models
  - The platform was model agnostic and worked on a "bring your own script" philosophy whether it was a ML, DL, or GenAI solution
  - Each deployment is isolated in compute, role accesses and data accesses

Principal Data Scientist *April '24 - January'25*
Saviynt *Bangalore*

- **Tech Stack** : AWS, Bedrock, Langchain, VectorDBs - Pinecone, Chroma, Milvus
- **Natural Language to SQL**
  - Built a text-to-SQL tool to assist Saviynt app users in getting standard insights about their Saviynt product. Used LLMs with a combination of RAG, Knowledge Graphs and Agents.
  - I have extensively referred state of the art research from the popular Spider SQL benchmark for this project

Senior Data Scientist *May '21 - March '24*
IDFC First Bank *Bangalore*

- **Tech Stack** : AWS, Python, SQL, API Gateway, Lambda, SageMaker, Docker, ECR, S3, DynamoDB, Nifi, Kafka, CICD (Jenkins/Bitbucket), Airflow, Mistral, GPT, HuggingFace, PyTorch, PySpark
- **Image generation of marketing content**
  - Deployed a stable diffusion based fine-tuned model for generating marketing template images to assist designers
  - Reduced turn around time of design templates from hours to minutes
- **Realtime Risk Models**
  - Led architecture design, development and deployment of 10+ real-time risk models
  - For the new scorecards the latency drop from **500-1000ms to under 100ms** where models were inferencing, monitoring and logging 1000+ requests per minute
- **Knowledge Bot with Generative AI**
  - Built a question-answer application to assist relationship managers in answering customer queries using LLMs
  - Used **RAG** architecture to retrieve answer chunks from vector DB(redis) and summarize answers using **langchain**, and openai gpt-3.5-turbo LLM
  - **15% more single call query resolution** for credit card related queries

Data Scientist *January '19 - April '21*
Flipkart *Bangalore*

- **Tech Stack** : Flipkart Data Platform, Python, SQL, PyTorch, scikit-learn, ETL, PySpark
- **Product Recommendation Engine**

- Experimented with content-based filtering, collaborative filtering, matrix factorization and deep-learning optimization techniques to improve the existing product recommendation system
- This helped in engaging use on the platform and increased the number of subsequent products explored after search

- **Listing Fake Score**
  - Built an ML model to classify product listings by sellers as counterfeits using an XGBoost classifier model.
  - The flagged listings were sent in the ops bucket for manual evaluation of sellers and action on them
  - These initiatives reduced customer reported fraud from **0.33% to 0.28%** of all orders

Decision Scientist *November '16 - December '29*

MuSigma *Bangalore*

- **Tech Stack** : AWS, Python, SQL, dataiku, scikit-learn, tableau, redshift, pandas, numpy
- **Rare disease patient identification**
  - Worked with one of the Big Pharma companies to predict whether a US patient is likely to have a rare form of cardiomyopathy using different tree based classification models
  - Achieved **76% recall** with Random Forest model and a wide variety of feature engineering tasks
  - The modelling phase heavily relied on data augmentation and handling of imbalanced classes as only **0.016%** of all admitted US patients are diaganosed with this disease.
- **ML Platform Owner**
  - Building proof-of-concept production ML projects to showcase end-to-end capabilities of dataiku(for data wrangling and modelling) and tableau (monitoring model end EDA metrics) in
  - Conduct training sessions for a team of 50+ data scientists in client + offshore team for effective usage of ML platform

Side Projects

Analytics Vidya Hackathon: Top 5% on the leaderboard

- Participated in the Twitter hate speech tag competition in tweets where I trained an LSTM model with GLoVe embeddings to achieve the f1-score test at **the top 5%** of the leaderboard (Notebook on GitHub)

Education

Guru Gobind Singh Indraprastha University, Delhi **2012 – 2016**

Information Technology *B.Tech.*