Sandeep Yerra

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EDUCATION

Boston University **Apr 2024**
M.S. in Applied Data Analytics *GPA: 4.00*
(Teaching Assistant – Big Data Analytics, Research Assistant – Quantization of ML models for Human Activity Recognition)

Indian Institute of Management (IIM Indore), India **May 2009 – Feb 2011**
Post Graduate Diploma in Management (MBA) *GPA: 3.77*

IIIT Hyderabad, India **May 2005 – Mar 2009**
B.Tech. in Computer Science Engineering *GPA: 3.88*

COMPUTATIONAL SKILLS

- Certifications - Deep Learning Specialization, Natural Language Processing Specialization, Chartered Financial Analyst (CFA), Financial Risk Manager (FRM)
- R - Implemented Linear and Logistic Regression, Time Series models (ARIMA, Prophet, Holt-Winter, TBATS).
- Pytorch, Tensorflow - Implemented CNN, Variational Autoencoders, GAN, Transformers, Quantization.
- Python - Implemented XGBoost, Random Forests, Vector Autoregression, Clustering.
- CoreML, SQL, DBT, Jinja, Tableau, Spotfire, Streamlit
- Libraries/Frameworks - AWS, GCP, Docker, Kubernetes, MLFlow, Airflow, Bloomberg, Reuters.

WORK EXPERIENCE

Senior Product Scientist, Indeed.com, Hyderabad, India Nov 2021 – Apr 2023
- Key contributor in a team dedicated to Lead Generation, Churn Prediction, and Uplift Modeling for SME segment Sales Reps, impacting 40% of Indeed's revenue and targeting 60% of its customer base.
- Successfully deployed end-to-end predictive model identifying new customers which improved sales conversion by 7%.
- Utilized Explainable AI to develop effective pitch phrases, improving the sales conversation initiation process.
- Led model impact evaluations through A/B testing and designed experiments for both incremental and ground-up models.
- Collaborated with Sales leadership and Engineering teams to brainstorm and validate innovative, transformative ideas.
- Developed an automated OOP based training module streamlining data ingestion, feature generation, model development.
- Spearheaded the creation of personalized email campaigns using response models for targeted customer engagement.
- Functioned as a calibrated interviewer as part of Indeed's Product Scientist hiring process and mentor at Indeed University.
- Demonstrated expertise in Python, R, DBT, Jinja, AWS, GCP, MLFlow, Airflow, and Gitlab.

Deputy General Manager, Reliance Industries Limited, Mumbai, India Aug 2015 – Nov 2021
- Achieved Cash flow target for the world's largest single location refinery by managing Risk (VAR) of $ 2Billion.
- Responsible for analytics consulting services including business process mapping, KPI formulation and predictive modeling.
- Leveraged analytics to drive business development, productivity and process improvements and energy mix optimization.
- Developed a Crude Oil Sentiment Index using Natural Language Processing (NLP) to analyze real time news articles.
- Conducted extensive market research to identify driving forces and their impact on commodities – financial/ macro-economic, upstream, downstream, demand/ supply balance and tracking commodities vessel movements.
- Formulated and back-tested algorithmic trading strategies and risk mitigation strategies using Python, SQL and Tensorflow.

Manager, Reliance Industries Limited, Mumbai, India May 2011 – Aug 2015
- Developed Risk monitoring framework with Outlier detection, VaR modeling, Dashboarding and real-time risk mitigation.
- Improved production planning and budgeting process of Oil market products through accurate demand forecasting.
- Developed multi-factor models to identify pseudo-hedge instruments for illiquid assets, incorporating PCA analysis.
- Implemented a ML-based strategy to enhance oil product profitability by hedging against fluctuating benchmark prices.

PROJECT EXPERIENCE

Music Recommendation System, Boston University, Boston Sep 2023 – Dec 2023
- Utilized Collaborative Filtering (ALS), Content-Based Filtering (Word2Vec, TFIDF, LDA), and Locality Sensitive Hashing.
- Generated playlist recommendations and integrated Collaborative Filtering (Elephas + Pyspark), achieving low RMSE.

Context Limitation of LLM, Boston University, Boston Sep 2023 – Dec 2023
- Created a LLM based chatbot in Python for custom PDF Q&A, utilizing RAG, Streamlit, Langchain and Chroma DB.
- Achieved context limitation through experiments on similarity matching using Sentence Transformers and Autoencoders.

MLOPS Pipeline using Kubernetes, Boston University, Boston Sep 2023 – Dec 2023
- Built an MLOps pipeline integrating MLFlow, Kubernetes, Docker, Grafana, Prometheus, PostgreSQL, GCP and Streamlit.
- Deployed ML model to K8s hosted MLFlow/Streamlit & PostgreSQL(GCP hosted). Monitored using Grafana/ Prometheus.

Multimodal Hateful Meme Detection, Boston University, Boston May 2023 – Aug 2023
- Experimented with VisualBert, CLIP, and Huggingface MMBT, with Google Entity Detection and Meta Deepface.
- Attained a standout 78% accuracy in hateful meme detection using a multi modal architecture using Pytorch.