Sandeep Yerra

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COMPUTATIONAL SKILLS

- Certifications - Deep Learning Specialization, Natural Language Processing Specialization
- R – Statistics, Linear and Logistic Regression, Time Series models (ARIMA, Prophet, Holt-Winter, TBATS).
- Pytorch, Tensorflow - CNN,RNN, LSTM, GRU, Variational Autoencoders, GAN, Transformers, Quantization, SOM, RBM.
- Python - Implemented XGBoost, Random Forests, Vector Autoregression, Clustering, GMM.
- SQL, Hadoop, Pyspark, DBT, Jinja, Tableau, Streamlit
- Libraries/Frameworks - AWS, GCP, CoreML, Docker, Kubernetes, MLFlow, Airflow, Grafana, Prometheus.

WORK EXPERIENCE

Research Assistant, Boston University under guidance of **Prof. Reza Rawassizadeh**   Sep 2023 – Present
- Developed Human Activity recognition models employing MLP, RNN, LSTM, CNN and Transformers architectures.
- Optimized deep learning models using Dynamic Quantization, QAT and experimented using Pruning enhancing efficiency.
- Leveraged Pytorch and CoreML to benchmark the size, accuracy and inference time on Apple-Ios wearables

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 Causal inference (A/B testing) and designed innovative experiments for ML 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.

Senior Derivative Trader, 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.

Market Risk Analyst, 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

Context Limitation of LLM, Boston University, Boston   Sep 2023 – Dec 2023
- Created a LLM based PDF Q&A, utilizing Retrieval Augmented Generation, Streamlit, Langchain and Chroma Vector DB.
- Used embeddings OpenAI ADA, Instructor-XL, SBert MPNet and LLM's OpenAI GPT, falcon-7b-instruct, llama 7b
- Achieved context limitation through experiments on similarity matching using Sentence Transformers and Autoencoders.

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.

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.

EDUCATION

Boston University   **Apr 2024**

M.S. in Applied Data Analytics   *GPA: 4.00*
(Teaching Assistant – Big Data Analytics, Research Assistant)

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*