

Prathyusha Murala

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EDUCATION

Syracuse University, Master of Science - Applied Data Science

Aug 2023 – May 2025

Relevant Coursework: Quantitative Reasoning for Data Science, Responsible AI, Large Language Models

Dayananda Sagar University, Bachelor of Technology - Computer Science and Engineering

Aug 2018 – Jun 2022

Relevant Coursework: Machine Learning, Deep Learning, Data Warehousing & Data Mining, DBMS

SKILLS

Programming Languages, DBMS & Cloud: Python, R, C, Oracle, MySQL, SQL, Azure, GCP, AWS, JavaScript

Data Science & Machine Learning: Scikit-Learn, TensorFlow, Keras, PyTorch, Data Manipulation (Pandas, NumPy), NLP Libraries (NLTK, Spacy), A/B Testing, Time Series Forecasting, Apache Spark, LLMs, GenAI, RAG, GANs

Data Visualization & Business Intelligence: Power BI, Tableau, Excel, Power Query, PowerPivot, Microsoft Access

PROFESSIONAL EXPERIENCE

PricewaterhouseCoopers AC

Associate

Mar 2022 - May 2023

- **Reduced manual review time by 60%** by developing a BERT-powered parser to extract compliance-related text from vendor security reports, significantly enhancing operational efficiency.
- **Improved security control mapping by 80%** through topic modeling and KeyBERT-based keyword extraction, strengthening compliance accuracy.
- Leveraged **SBERT** for similarity scoring to assess vendor policy adherence across **six ISO 27001 domains**, increasing **compliance verification accuracy by 40%** and improving **classification precision by 35%**.
- Refined risk scoring models by comparing similarity scores to past assessments and applying rule-based adjustments, improving **accuracy by 25%** and ensuring more reliable compliance evaluations.
- Collaborated with cross-functional teams to automate vendor risk reporting, cutting processing time per vendor from **3 days to 4 hours**, saving **\$500K annually**, and increasing audit efficiency by **70%**.

Wipro LTD

Intern - Data Analyst

Jun 2021 - Aug 2021

- Devised an API-integrated tool with Plotly and NSEpy, leveraging 20 years of historical data for real-time updates and **30%** improved decision accuracy.
- Created a comprehensive **full-stack Django** solution showcasing an interactive API for real-time data handling, improving real-time data processing by **35%**.
- Applied **CAGR techniques** with **Agile practices** to reduce defect rates by **35%** and identified **15 profitable opportunities**.
- Created an **interactive dashboard for trading analytics**, increasing usability for financial analysts and enabling **15% faster market trend analysis**.

PROJECTS & PUBLICATIONS

EEG Based Emotion Classification: A comprehensive study, ERCICA: Advances in Computing and Information, Springer Publishing

- Conducted advanced EEG wave analysis for emotion classification using **PSD and DWT** features; increased neural signal interpretation accuracy and reliability by **30%**.
- Developed an **LSTM-DWT model** achieving **96.76% accuracy**, outperforming RF (91.15%), SVM (95.98%), and KNN (93.65%).
- Authored a publication in a prestigious **2023 Springer journal** and presented at **ProjectExpo 2022**.

Predictive Analytics for Chronic Disease Management:

- Developed a machine learning model using XGBoost to predict chronic disease risks, achieving **92% accuracy** in early detection.
- Queried and processed **100K+ patient records** using **SQL & BigQuery**, optimizing query performance by **30%**.
- Deployed the model on **GCP (BigQuery ML)** to test predictions, reducing processing time by 30% and enabling scalable risk assessments.

LexiSense: Intelligent Book Matching:

- Evaluated 3 **text embeddings** (DistilBERT, T5 Tokenizer, SBERT) with 3 **dimensionality reduction techniques** (PCA, t-SNE, UMAP) to optimize book representation.
- Conducted **M×N experimentation** by applying different clustering algorithms (**K-Means, DBSCAN, Agglomerative**) on **30K data points**, achieving the best silhouette score (**0.6**) with UMAP + K-Means.
- Implemented **SVD-based collaborative filtering**, improving recommendation accuracy by **20%**, enhancing personalized book recommendations.

Anomaly Detection in Financial Transactions:

- Designed an unsupervised fraud detection system using **Autoencoders & Isolation Forests**, improving fraud detection accuracy by **28%**.
- Processed **10M+ transactions** with **Apache Spark & PySpark**, ensuring fraud monitoring for banking applications.

AWARDS

- **Wipro Net Zero Sustainability Prize:** Awarded for a project on sustainable housing during Syracuse Open Data Day.

ACADEMIC EXPERIENCE

Teaching Assistant – Data Visualization and Analytics | Syracuse University

- Mentored students on data visualization from scratch, including introductory Excel skills and visualization techniques using Tableau.