Abhigna Reddy Musku

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SUMMARY

Professional with experience in Machine Learning, LLMs, Analytics, and Project Management. Exploring how to build AI products that demonstrate value while considering societal/policy implications.

EXPERIENCE

Analytics Developer (Health, Safety & Environmental) *Mar 2025 - Present*
International Paper, Memphis

- Created **ETL Pipelines**, **Data Flows**, **Tables** and worked on data transformations using **PySpark** and **Python** in **Microsoft Fabric's** environment to facilitate building systematic data Infrastructure for the HSE division.
- Created a comprehensive project scoping document and built an **ML classification model** using **BERT** embeddings with **XGBoost.**
- Analyzed safety event data and performed correlation Analyses between variables. Developed **PowerBI** dashboards to visualize findings and **presented insights to business stakeholders.**
- Developed an **Actionable Project Tracker** to monitor multiple projects and provide high-level overview of priorities for the team.
- Partnered with cross-functional stakeholders to gather business requirements and translate to technical solutions.

Intern (Environmental, Health, Safety & Security) *Sep 2023 – Jan 2024*
Tesla, Austin

- Conducted **ad-hoc analysis** and utilized **NumPy, Pandas** libraries in python to conduct in-depth data analysis of safety events.
- Employed **Matplotlib, Seaborn, PowerBI** and **MS Excel Charts** to create visualizations and **dashboards** of the analysis.
- Presented findings to the management, which contributed to successful funding of $X Million, to establish Safety Protocols.
- Developed a **process from ground up** to automate Job Hazard Analysis (JHA) documentation, which reduced creation time by **80%.**

SAP Functional Consultant / Analyst (Materials Management) *Jun 2021 – Sep 2022*
Kagool, India

- Conducted System Integration Testing and Unit Testing to validate **inventory levels** and ensure successful integration between SAP backend and Fiori, which reduced manual data entry in cadent systems significantly.
- Created and maintained **Master Data** of materials, vendors, customers within **SAP ECC** and **SAP S/4 Hana.**
- Collaborated with cross functional teams and stakeholders to gather business requirements and translate to technical solutions.

ACADEMIC RESEARCH EXPERIENCE

Machine Learning Research Assistant [Large Language Models for Sentiment Analysis Tasks] *Mar 2024 – Aug 2024*
Northeastern University, Boston

- Leveraged **Regular expressions, NumPy, Pandas in Python** to develop structured datasets from unstructured financial data**.**
- Leveraged parameter efficient fine-tuning methods like **QLoRA** and **LoRA** for model optimization and finetuning **Llama 3.**
- Continuously **analyzed and optimized model performance** through **k-fold cross-validation, hyperparameter tuning, L2 regularization** and **adjusted training data** which resulted in significant accuracy improvements for sentiment analysis tasks**.**

PROJECTS

Wiseblock – AI Powered Distraction Blocker & Planner (Product Development for Engineers)

- Worked on **Ideation,** conducted **Market Research,** & developed **Market Spec, Product Spec, and DFMEA** for the product**.**

Multi Class Classification of Dry Beans (Machine Learning) [LINK]

- Created a **comprehensive technical report** for a project on developing **ML models** (LR, SVM, Neural Networks) from scratch.

SKILLS

Programming Languages:	Python, PySpark, SQL
Software/ Frameworks:	Microsoft Fabric, PowerBI, MS Office Suite, Google Workspace, SharePoint, SAP ECC, Tableau
Databases/Developer tools:	MySQL, SQL Server, PostgreSQL, Git, VS Code, Jupyter, GitHub Copilot
Libraries:	Numpy, Pandas, Scikit-Learn, PyTorch, Transformers, Spacy, re, Matplotlib, Seaborn
Product Development:	Market Research, Ideation, Business Canvas, Market Spec, Product Spec, Risk Analysis
Machine Learning:	Linear Regression, Logistic Regression, SVM, PCA, Decision Trees, K Means, KNN

EDUCATION

NORTHEASTERN UNIVERSITY, BOSTON *Sep 2022 – Aug 2024*
Master of Science in Industrial Engineering (Data Science and Analytics Focus) *CGPA: 3.8/4.0*
Coursework: Machine Learning, MLOps, Product Development, Database Management, Project Management, Simulation Analysis

BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE, PILANI - HYDERABAD CAMPUS *Aug 2017 – May 2021*
Bachelor of Engineering in Mechanical Engineering (Finance Electives)

EXTRA CURRICULARS

Volunteer and Meditator (Vipassana) –Meditator & Served as a volunteer by supporting logistics & maintenance tasks.