Venkateshwar Balakrishnan

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SUMMARY

Data Professional with almost 4 years of experience in machine learning and analytics. Proven track record of developing ML models and BI solutions. Expert in building end-to-end data pipelines and cloud solutions. Proficient in Python, SQL, Azure ML, and Power BI.

PROFESSIONAL EXPERIENCE

Saipem (Client: Saudi Aramco)

Data Analyst Jul 2019 – Oct 2022

Machine Learning & AI

- Deployed production ML models achieving 92% accuracy in equipment failure prediction, leveraging ensemble methods and deep learning, resulting in **$1.5M** cost savings through predictive maintenance.
- Implemented computer vision solution using **CNN architecture**, achieving **95%** accuracy in automated component detection across **100K+ images** saving 300 man-hours.
- Built real-time **anomaly detection** system using streaming analytics and clustering algorithms (K-Means, DBSCAN), enabling **48-hour** advance failure detection.

Data Engineering & Analytics

- Designed and optimized **dimensional data models** in **SQL**, implementing slowly changing dimensions and fact table optimization, improving reporting efficiency by 30%.
- Built end-to-end **ML pipeline** using **Azure ML** Service and **Docker**, implementing automated testing and model monitoring, reducing deployment time by 60%.
- Developed scalable data processing pipeline handling **10M+** daily records using **PySpark** and **Azure Databricks**, implementing parallel processing and optimization techniques.
- Redesigned **OLAP architecture** using SQL Server **star schema** and **materialized views**, achieving 40% faster query performance.

Business Intelligence & Visualization

- Automated weekly reporting processes using **Power BI** and **DAX** functions (**CALCULATE, FILTER**) decreasing report preparation time by **40%** and ensuring timely access to critical data for strategic planning.
- Built over **20 Power BI** dashboards tracking critical **KPIs** including efficiency, maintenance schedules, and project milestones, enabling data-driven decisions that improved project delivery times by 15%.
- Led bi-weekly data insights presentations to senior management, translating complex analyses into actionable recommendations.

ACADEMIC PROJECTS

Flight Delay Prediction: Implemented machine learning models to predict flight delays with **6M+** rows of US domestic flight data, solving for class imbalance and achieving an **F1 score of 0.91** through hyperparameter tuning.

Document Analysis System using RAG: Developed an AI-powered document analysis platform that allows users to extract insights from PDFs through natural language questions using **RAG** architecture.

Optimizing E-commerce Sales through A/B Testing: Conducted A/B testing on product videos, resulting in a **20-unit** increase in weekly sales for featured products and an **18-unit** increase for coordinating items.

TECHNICAL SKILLS

Programming Languages:	Python (Pandas, Scikit Learn, TensorFlow, Plotly, Matplotlib), R, Pyspark, Azure ML
Databases:	Microsoft SQL Server, Azure SQL, Databricks, Oracle DB, Hadoop, Airflow
Data Visualization:	Tableau, Power-BI (DAX, M)
Tools:	Git, SharePoint, PowerApps, Docker

EDUCATION

The University of Texas at Dallas Dec 2024

Master of Science, Business Analytics and Artificial Intelligence

Certifications: Machine Learning Specialization by Deeplearning.AI

PSG Institute of Technology and Applied Research, India May 2019

Bachelor of Engineering