

Madhusudhan B

Data Scientist

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SUMMARY

Motivated Data Scientist with 6+ years of experience in executing data-driven solutions in diverse fields such as Energy, Manufacturing & CPG. Academically sound with Dual Masters in Manufacturing & Data Science, proficient in building Machine Learning & Deep Learning models for classification, regression & forecasting tasks.

KEY SKILLS

- Machine Learning Methodologies • Optimization Techniques • Data Mining & Analytics
- Predictive & Statistical Modelling
 - Data Analysis
 - Data Visualization
 - Deep Learning
- Team Coordination & Leadership
 - Debugging • Problem Solving

TECHNICAL SKILLS

Big Data Ecosystem: Spark, Databricks, Azure

Languages: Python, PySpark, Scala, SQL

Cloud Computing: Azure, AzureML Studio

Statistics/ML: Regression, Classification, Clustering, Ensemble & Boosted models, Time-series models

Deep Learning: ANN, LSTM, RNN

Others: mlflow, Delta lake

CERTIFICATIONS

- Certified Associate Developer **Spark 3.0** | Databricks | Feb'21
- Certified Solutions Architect | **Databricks** | Oct'20
- Certified **SQL Analyst** Associate | Databricks | Feb'22
- A-Z Machine learning using **AzureML** | Udemy | Aug '20

EDUCATION

Masters in Data Science

Apr '20 - Mar '22

Liverpool John Moores University

UK

- **Research Project:**

- Multi label emotion classification of Tweets using **Transformers** -> a comparative analysis of various architecture with a comprehensive literature survey and submission of final thesis adhering to all **research** guidelines as per LJMU

PG Diploma in Data Science

Jul '18 - Sep '19

IIIT-B, Bengaluru

Bengaluru, IN

- Completed with a CGPA of 3.62 (out of 4)

M.Tech in Manufacturing Management

Sep '15 - Apr '17

BITS, Pilani

Pilani, IN

- Completed with a CGPA of 9.2

B. E. in Electricals & Electronics

Sep '05 - Jun '09

BMS College of Engineering

Bengaluru, IN

- Completed with 84% aggregate & Secured University rank (2nd in the State)

KEY DATA SCIENCE PROJECTS

- **Domain: CPG/Retail | Tech Stack: Scala, Python, Databricks | Jul '20**

- Objective: Generation of customized product recommendations to stores on App- "Smart Basket" concept & influence their buying behavior
- Solution: Implemented ML approach to segment similar stores and built Gradient Boosting classifier model to predict selling probability of a product/item wrt a store & implemented Collaborative Filtering for cross-selling model
- Key Achievements:
 - Improved the overall **recommendation efficiency by 5%** and **recommendation coverage by 15%**

- **Domain: CPG/Retail | Tech Stack: Python, Scala, SQL, Databricks | Jan '21**

- Objective: To generate substitute & complimentary product recommendations to stores on App
- Solution: Developed a recommendation logic using item similarity features/ business rules to create substitute & complimentary list customized for each store
- Key Achievements:
 - No ML model used -> Utilized Distance metrics such as Euclidean, Manhattan, Cosine for similarity calculations & achieved performance rate of 25%

- **Domain: CPG/Retail | Tech Stack: Scala, Python, Databricks, mlflow | Aug '21**

- Objective: Generation of product recommendations to stores through salesman channel & enhance the recommendation system performance
- Solution: Implemented ML approach to segment similar stores and built Random Forest classifier model to predict selling probability of a product/item wrt a store & implemented Collaborative Filtering for cross-selling model
- Key Achievements:
 - Improved the overall **recommendation efficiency by 5%** and **recommendation coverage by 10%**
 - Combine 2 independent processes leading to reduction in cost, effort & time

- **Domain: CPG/Retail | Tech Stack: Scala, Python, Databricks, AzureML | May '22**

- Objective: Forecast revenue of store at month level and help improve salesmen target setting

- Spark overview for **Scala Analytics** | IBM | Aug '20

ADDITIONAL ACHIEVEMENTS & RECOGNITION

- Felicitated with "**Hats Off**" award thrice (in 2021, 2022) for solving complex project use case & successfully executing Project deliverables
- Recognized as "**Top Talent**" twice (in 2021, 2022) as part of Annual Appraisal System
- Achieved CGPA of 3.62 (out of 4) during PG Diploma in Data Science, IIIT-B
- Achieved CGPA of 9.2 during M.Tech, BITS Pilani
- Secured **University rank (2nd in the State)** during B.E, BMS College of Engineering

- Solution: Implemented univariate time series models (Theta, ETS, BiLSTM, TBATS) & multivariate timeseries models (N-Beats, TFT), regression models (Light Gradient Boosting) for sale value forecasting at store-monthly level, using various store segmentation techniques
- Key Achievements:
 - Able to achieve **high forecasting accuracy** for large/high sale value stores
 - Improved the performance of low sale value store segments significantly with respect to Baseline performance

PROFESSIONAL EXPERIENCE

Lead Data Analyst

Feb '22 - Present

Mindtree Limited

Bengaluru, IN

In addition to existing responsibilities, below activities are also handled:

- Perform Feature engineering for **time-series** & regression models
- Using **AzureML studio** with Compute Instance/Compute Cluster to create experiments, run models & track results with mlflow
- Build & evaluate univariate and multivariate time series models (both classical ML and DL) for **forecasting** of revenue of a store/distributor at monthly level
- Identifying and analyzing factors/features that improve forecasting model performance thus helping in providing improved and meaningful targets to salesmen

Senior Data Analyst

Jan '20 - Jan '22

Mindtree Limited

Bengaluru, IN

- **Ingesting** huge data sets from Data Lake storage and Performing Data cleaning and transforming on **Distributed Big data platform** such as Spark
- **Building & evaluating Machine Learning models** (classification, clustering) on Azure Databricks and implementing **mlflow** for logging of parameters, metrics and model tracking
- **Developing** Business level KPIs for client reporting and for measurement of algorithm performance
- Identifying and analyzing factors/features that improve **recommendation system performance** thus helping in **outlet acquisition, retention and understanding buying behavior**
- Creating final deliverables such as **Project Standards** document & **Technical Project** document
- Generating **Business and technical presentations** to client summarizing analysis insights
- **Training** the freshly recruited minds in domain/data understanding & guiding team members in project related tasks

Plant Lead Analyst - Energy Conservation & Analytics

Jan '16 - Dec '19

Bosch Limited

Bengaluru, IN

- Administered building **Analytics platform** for Energy Efficient Heat pumps as alternate solution for conventional heating in component cleaning
- Performed **Energy & Demand pattern study** to analyze & reduce utility and production MAE energy consumption during peak/off-peak periods

Deputy Manager - Energy Conservation

Feb '13 - Dec '15

Bosch Limited

Bengaluru, IN

- Identified & implemented Cost Reduction and Energy Conservation Projects in utilities and production machinery/equipment
- **Synchronized** at Plant level for various initiatives such as Energy/cost allocation, **energy forecasting** while monitoring and reporting the status via PDCA approach

Technical Engineering Functions

Jan '10 - Jan '13

Bosch Limited

Bengaluru, IN