



# Tushar Singh

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## ABOUT ME

Experienced Data Scientist with 5+ years of expertise in machine learning, NLP, time series forecasting, and predictive modeling, delivering impactful solutions that optimize business outcomes. Proficient in Python, SQL, Power BI, and Azure Data Factory, with hands-on experience in ETL pipeline design, dashboard development, and scalable ML model deployment. Skilled in leveraging advanced AI techniques, including Generative AI and LLMs, to solve complex problems across industries like chemical, retail, and beverage sectors.

## DIGITAL SKILLS

### Machine Learning Concepts

Time-Series Analysis | Classification | Regression | EDA | Statistical modelling | Web Scraping | ML Ops | Predictive Modelling | Gen AI | Natural Language Processing | Clustering | ruptures | TensorFlow | NLTK | Streamlit | LangChain

### Data Visualization Tools

Power BI | Power Query | Tableau

### Software/Packages

VS Code | PyCharm | NumPy | MS-Excel | Pandas | SciKit Learn

### Cloud Platform

Azure DevOps | Azure Open AI | Azure Data Factory | Azure Databricks

### Programming Skills

Python | R | SQL

## WORK EXPERIENCE

08/2022 - CURRENT

### DATA SCIENTIST TATA CONSULTANCY SERVICES

#### PROJECT 1: Grade Changeover Optimization

- Designed and deployed an Azure-based advisor to minimize off-grade production during grade changeovers by analyzing historical data, reducing errors in target value definitions, and improving production efficiency across multiple polymer sites.

#### PROJECT 2: Hydrogen Outflow Optimization and Forecasting

- Developed a predictive analytics tool to forecast hydrogen outflow and reduce penalties by integrating data from multiple sources (LIMS, PI2Cloud, Flowers). Enhanced operational accuracy and decision-making, minimizing forecasting errors and improving efficiency across industrial sites.

#### PROJECT 3: Generative AI Enablement

- Led efforts to implement Generative AI solutions tailored to diverse customer needs, leveraging LLMs, LangChain, Copilot, and Responsible AI. Enhanced automation, streamlined workflows, and accelerated innovation across multiple domains, driving transformative industry impact.

#### PROJECT 4: Data Lake Migration from Gen1 to Gen2 with ADF

- Executed seamless migration of data, building pipelines, and integrations using Azure Data Factory (ADF). Improved data accessibility, and scalability, and reduced errors in data operations, enabling more efficient analytics and decision-making for the industry.

03/2021 – 07/2022

## **DATA SCIENCE CONSULTANT** INFINITI RESEARCH MARKETING SOLUTIONS

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### PROJECT 1: Market Mix Modelling (Hygiene Industry)

- Developed automated data pipelines to aggregate data from multiple sources, integrating external scraping (Selenium) and API data for media analysis.
- Implemented ML regression models to evaluate the impact of media on sales, reducing manual effort and providing actionable insights via Power BI dashboards.
- Streamlined decision-making processes, enabling brands in the US and Canada to optimize media investments and improve sales performance.

### PROJECT 2: Profit and Loss Forecasting (Beverage Industry)

- Designed a time series forecasting model to predict monthly sales volumes (khl) across multiple regions, incorporating estimates for price, discounts, and EBITDA.
- This solution enabled stakeholders to analyze the impact of various drivers and make informed, data-driven decisions for Year-to-Go (YTG) strategies.
- The initiative led to a 9.5% increase in sales volume, a 15% rise in net revenue, and a 12% growth in EBITDA for FY21, showcasing the value of data-driven strategy formulation in the industry.

### PROJECT 3: Demand Forecasting (Chemical Industry)

- Designed a forecasting model surpassing SAP accuracy for 86% of SKUs, with 0.1–2x improvement in continuous demand and >3x in intermittent demand.
- By integrating macroeconomic and industrial factors with custom algorithms, reduced workload, improved forecast reliability, and optimized resource allocation across the APAC region.

11/2019 – 02/2021

## **DATA SCIENTIST/ PROJECT OWNER** ARDEM DATA SERVICES PRIVATE LIMITED

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### PROJECT 1: Inventory Distribution Model (Retail Industry)

- Developed and led a POC for an inventory distribution model, automating the processing of over 500 raw POS data files into a streamlined Python-based system.
- This solution cleaned, mapped, and integrated data into dashboards for real-time revenue tracking and inventory management.
- By reducing manual data handling, it significantly lowered workload, improved SKU tracking, and enabled the marketing team to optimize strategies, negotiate supplier costs, and enhance global inventory oversight.

### PROJECT 2: Automated Data Extraction from Utility Bills using OCR

- Developed an OCR-based Python model to extract parameters from gas and water bill PDFs, automating data entry processes, reducing manual effort by 80%, and improving data accuracy for database operations.

01/2019 – 06/2019

## **JUNIOR DATA SCIENTIST** MTW LABS INNOVATIONS INDIA PRIVATE LIMITED

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### Sentiment Analysis (IT Industry)

- The target was to create a clean data system for the project where our team was building an NLP NLP-based sentiment analysis for all the reviews of the IT companies.
- Performed classification using multiple techniques like N-Grams and Semantic Hashing to achieve my goal.

## ● **EDUCATION AND TRAINING**

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06/2018 – 04/2019

### **POST GRADUATE DIPLOMA IN DATA SCIENCES** Manipal Academy of Higher Education, Bengaluru

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08/2014 – 05/2018

### **BTECH IN ELECTRICAL ENGINEERING** Dr. K. N Modi Institute of Engineering and Technology, Ghaziabad

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### **HANDS-ON APPROACH TO AI FOR REAL-WORLD APPLICATIONS** Indian Institute of Technology, Kharagpur

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### **MACHINE LEARNING ENGINEER CERTIFICATE** Pro5.ai

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