


Summary

Experienced engineer with a strong background in data science, machine learning, deep learning, data engineering and analytics. Technical expertise through industrial and academic research, and projects. Leadership experience at institute level.

Experience

 **Tata Consultancy Services - Research and Innovation Unit**

Research Engineer

September 2022 - April 2024

Leveraged end-to-end ML solutions. Used cloud for analytics and data engineering solutions. Contributed in:-

- Revenue Prime™ (revenue management for CPG industries)**


- Promotion optimization: Improved return on investment through growth in Promotion RoI by 15%
 - Price optimization: Pricing to tackle inflationary pressures
 - Top and bottom-line growth: Increase in revenue and profit by 2-5% through insights on key growth levers.

Link
- Envirozone™ (sustainability as a service)**

- Tracked carbon footprint through carbon management systems. Built forecasting models offering detailed view of Scope 1, 2, and 3 emissions across the value chain to meet the greenhouse gas (GHG) emission protocol requirements and Science-based Targets initiative (SBTi) and Carbon Disclosure Project (CDP).
 - Tracked sustainability activities (SDGs) by analyzing risks and scenarios. Customized data collection for farm and harvest details, to improve location accuracy using Google geo-tagging.


Link

Education

 **Indian Institute of Technology Hyderabad**

Doctor of Philosophy - Ph.D., Computer Science Engineering

July 2025 - Ongoing

 **Jadavpur University**

Bachelor of Engineering - B.E., Electrical Engineering

August 2018 - May 2022

CGPA: 8.4

Electives included Advanced Instrumentation (Measurements), Analysis of Measurement Data and Artificial Intelligence.

Skills

Mathematics, Statistics and Probability	Machine Learning - ML Models, EDA, Preprocessing, Pipeline, Optimization, Production, MLOps	Deep Learning - CNN, RNN, GANs, Autoencoders, Deep Belief Networks, Transformers models, LSTM	ML Frameworks/Libraries - TensorFlow, Keras, PyTorch, Scikit-learn, Pandas, Numpy, Matplotlib, Seaborn, OpenCV, HuggingFace
Database Management (Systems) DBMS and Warehousing (SQL)	Programming Languages (Python,R,Javascript, HTML,C++) Data structures and Algorithms	GCP: Compute Engine, BigQuery, Kubernetes, Cloud Storage, Cloud Run AWS: EC2, S3, RDS, Lambda, IAM, VPS	Artificial intelligence - Search, logic, propositional, predicate, reasoning under uncertainty, inference (exact and approximate)
Microsoft Office and Google Workspace	Analytical, Critical thinking, Research oriented	Teamwork and accountability, Communication and Presentation	Data Analytics and Tools, Visualization (Google Sheets, Microsoft Excel, PowerBI)

Projects

- Secretary:** Served as member of the **Upper House Council** and **Founder-Secretary** of the Gir House. April 2021 - April 2022
Established essential processes and order required to synthesize a sustainable student activity ecosystem. Report
- Member - Course Review Committee, and Disciplinary and Welfare Committee, IIT Madras.**

Projects

- Forecasting Crime Categories (Kaggle Competition - Classical ML)** Kaggle Link
 - Dataset offered a comprehensive snapshot of criminal activities within the city encompassing incident details including date, time, location, victim demographics, etc. Analyzed the rich dataset, leveraged machine learning techniques to predict crime categories.
 - Received 0.95920 score and 48th/957 rank on kaggle.
- AI Agent for Academic Guidance** GitHub Link
 - Standard Conversational Features: Threading to maintain context across interactions, artefacts storage for key interactions and recommendations, adherence to rate limits and a defined context window.
 - Retrieval-Augmented Generation (RAG) Architecture: To handle common queries, the agent implements a RAG system that leverages a pre-indexed knowledge base to minimize calls to the language model (LLM) for frequently asked questions.
 - Academic Integrity: Agent highlights general strategies and avoids divulging solution specifics for assessments.