CURRICULUM VITAE

Dhrub Satyam

Lead Data Scientist

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Experienced Data Science and AI leader with a proven track record of turning business challenges into scalable solutions that drive real results. I led teams through the complete data science and AI development lifecycle, from initial problem definition to production deployment, while building robust frameworks that actually solve problems. My focus is on leveraging both traditional data science methods and cutting-edge AI technologies to create actionable insights that help leadership make confident, data-backed decisions and hit their strategic goals. I thrive on mentoring teams, fostering innovation, and ensuring our technical work translates into measurable business impact.

Technical Skills

Machine Learning/DL

Classification Algorithms: Logistics Regression, K-NN, Decision Tree (CART, C4.5), Random Forest, SVC
Regression Algorithms: Linear Regression, Decision Trees, Random Forest, SVR
Clustering Techniques: K-Means, Hierarchical, DB Scan
Dimensionality Reduction: PCA, LDA
Deep Learning: CNN, RNN, LSTM, GAN, Attention Mechanism, Transformers, TensorFlow, PyTorch, Keras
Recommender Systems: Collaborative Filtering, Content-Based, Deep Learning Retrieval, Ranking Models

Text Analytics/NLP

Basics: TF-IDF, Sentiment Analytics, Sentiment Analysis, Stemming, Lemmatization, POS Tagging

Advance: NER(Name Entity Recognition), Topic Modelling, Transformers, Word Embeddings, GPT, Language Models, BERT BiLSTM, GPT, RoBERTa, T5, XLNet, Transformers Architecture

Language Models: Fine-tuning, Transfer Learning, Multi-lingual Models

GenAI & LLM

Frameworks: LangChain, LlamaIndex, Streamlit, Flask

LLM Models: Llama2, Mistral, OpenAI GPT, Gemini Pro, Claude

Techniques: Prompt Engineering, RAG (Retrieval-Augmented Generation), Fine-tuning, Model Optimization

Tools/Languages

Languages: Python, R, Hive, Pig, SQL

Visualization Tools/Libraries: Tableau, PowerBI, Matplotlib, Seaborn, ggplot2

Cloud & Infrastructure: AWS (SageMaker, Lambda, Amazon Personalize, EC2, S3), Google Cloud Platform (GCP), DAG Orchestration

Analytics Platforms: Palantir Foundry, Streamlit Dashboard Development

API's: FastAPI, OpenAI API Integration

Databases

SQL Server, PostgreSQL, MongoDB, Google BigQuery
(Working with SQLAlchemy, PyMySQL, PyMongo)

Vector DB: ChromaDB, Pinecone

Statistical Analysis/Optimization

Statistics: EDA, Inferential Analytics, Hypothesis Test(t-test, z-test, chi-square, ANOVA, ANCOVA) Outlier Detection, Inter-Quartile Ranges, Sampling Techniques, 5 Point Summary, Correlation, Covariance

Mathematics: Probability, Vector Calculus, Linear Algebra

Optimization & Operations Research Algorithms: Knapsack Optimization, Linear Programming, Integer Programming, Multi-objective Optimization

Work Experience

Lead Data Scientist, Lowes, October 2024 - Present

1. Available to Promise (ATP) Predictive Analytics System:

- Engineered advanced machine learning models to forecast item arrival dates and quantities with 90%+ accuracy across supply chain network
- Generated $40M+ in incremental revenue by enabling advance sales commitments and improving customer satisfaction.

- Optimized inventory turnover and reduced stockout incidents by 30% through intelligent demand prediction
- Deployed real-time prediction pipeline serving 10K+ SKUs daily with sub-second latency requirements

2. Trailer Priority Optimization Algorithm:

- Developed multi-factor optimization engine incorporating out-of-stock projections, demand signals, profit margins, and item velocity.
- Automated trailer unloading prioritization reducing yard dwell time by 15% and lowering operational costs
- Enhanced supply chain efficiency resulting in improvement in inventory availability
- Implemented dynamic ranking system processing 1000+ daily trailer arrivals with complex constraint optimization for multiple RDC (Regional distribution centre)

3. AI-Powered Competitive Intelligence Platform | Lowe's AI Hackathon

- Architected AI-driven competitive pricing system using computer vision and NLP for product matching at scale Achieved good validation accuracy in competitor product identification across 50K+ SKUs using advanced deep learning models and integrating with API and Vector Similarity
- Built intelligent pricing recommendation engine factoring demand elasticity, margin impact, and market positioning
- Delivered automated price monitoring reducing manual analysis time by 80% and improving pricing agility Won "Best Innovative Solution" category award among 200+ participants

Leadership, Team Management & Strategic Execution

- Problem Solving & Team Leadership: Turned complex business problems into practical Data Science solutions using GenAI and ML approaches. Built end-to-end machine learning systems from the ground up and guided cross-functional teams through product development cycles.
- Team Growth & Mentorship: Grew talented teams through hands-on management and personalized coaching. Created learning opportunities that brought people together, built accountability, and helped everyone continuously improve their skills.
- Data Analysis & Stakeholder Communication: Analyzed massive datasets and built reliable predictive models that actually work. Kept a close eye on key metrics, adjusted strategies when needed, and regularly updated senior leadership with clear, honest insights about what the data was telling us.
- Innovation & Organizational Leadership: Empowered team members to take ownership and deliver their best work. Led company-wide innovation efforts like AI hackathons and helped mentoring promising ideas through programs like UPitch (Lowes Idea Pitch) , driving real technological progress across the organization.

Skills Used: *Python, Google Analytics, Bert, LLM's (Training) and OpenAI API, Optimization Algos, GCP, Palantir Foundry and more.*

Lead Consultant (Data Science), HCLTech, April 2022 - October 2024

1. Enhanced Product Recommendations: - Leveraged recommendation algorithms to optimize product suggestions, driving increased customer engagement and revenue growth.

2. Price Optimization Across Business Units: - Implemented advanced pricing optimization techniques to enhance profitability across diverse business units, resulting in improved financial performance.

3. Large Language Model (LLM) Based POCs: - Developed innovative proof of concepts utilizing LLM technology, revolutionizing text data processing and unlocking new opportunities for efficiency gains and innovation.

Skills Used: *Python, Google Analytics, Bert, LLM's (Training), NER, Tokenizer, ML Models, AWS Sagemaker, PowerBI, and more.*

Senior Data Scientist II, Deloitte USI, April 2021 - April 2022

As a Senior Data Scientist for their in-house development products, I *led* a talented team of over 10+ members, including Data Scientists, Data Engineers, ML Engineers, UI/UX Developers, and Visualization Engineers. Our collaborative efforts yielded significant recognition when we secured the 2nd Prize in the esteemed Global Conversational AI Challenge 2021, outshining 30+ teams across Deloitte member firms. Key accomplishments included:

1. Designing and implementing an end-to-end recommendation system pipeline utilizing advanced tools such as Amazon Personalize, AWS Lambda, and AWS Glue. This initiative streamlined our recommendation processes, enhancing customer engagement and driving business growth for the I2A - Insights to Action product (In house, D. USI).
2. Leading the development of multiple solutions for Human Capital, leveraging in-house analysis and delivering industry-leading products that addressed critical business needs. In this capacity, I leveraged a diverse skill set, including proficiency in Python, AWS Glue, Lambda for robust data management. These efforts have concluded, marking a chapter of impactful contributions to the advancement of data-driven innovation within the organization.

Skills Used: *Python, AWS Glue, Lambda, Amazon Personalize (Recommendation System), PostgreSQL*

Senior Analyst - Data Science, Infosys, January 2020 - April 2021

1. Developed various predictive models aimed at forecasting the Variable Market Expenditure (VME) required for specific car models within designated regions. These models played a pivotal role in strategically planning the Quarterly Budget for

the Marketing Team, ensuring optimized resource allocation and effective marketing campaigns.

2. Engineered predictive models to anticipate the demand for specific car models across different regions. These models provided invaluable insights into consumer preferences and market trends, enabling the client to proactively adjust production and distribution strategies to meet demand fluctuations.

Skills Used: Time Series Forecasting, XGBoost, Regression Algorithms, Hypothesis Testing, Decision Trees, Random Forest, Linear Programming etc.

Software Development Sr. Analyst (Machine Learning Engineer), Accenture, December 2016 - January 2020

1. Built Analytical Product for Telstra Optimising and Simulating Advertisement Spends for maximising revenue for Telstra Australia . Deployed the end to end flow:
Media Coverage:

- https://www.itnews.com.au/news/telstra-builds-900-machine-learning-models-for-marketing-overhaul473947
- https://www.cmo.com.au/article/629148/how-telstra-applying-machine-learning-marketing-mix-modelling/

2. Built hybrid classification models with Random Forest to detect fraudulent accounts and anomalous behaviours including credit card fraud, match cheating to help reduce fraud losses by millions of dollars annually.

Skills Used: Python, R, Machine Learning Models - Random Forest, Time Series Forecasting, Classification Models, Tensorflow, Pytorch, Scikitlearn.

Software Development Analyst (Data Analyst), Accenture, December 2015 - November 2016

1. Built Dashboards to monitor the health of the game economy, analyze data anomalies and communicate findings to the team with Tableau.
Skills Used: Tableau, Excel
2. Writing Complex Queries for data extraction to Data Lake | Cleaning The data.
Skills Used: Hive, Sqoop, HDFS, SQL, Advance Excel

Associate Software Engineer, Accenture, October 2014 - November 2015

1. Writing Queries for DAO layer for a front end development project.
2. Working with application developers to create optimized queries.
Skills Used: SQL, SQL Server

Education

M.S. (Applied AI), University of San Diego, 2025-2027 (Exp.)

Bachelor of Technology (ECE), Lovely Professional University, 2010 - 2014

Senior Secondary (Non Medical), PAM College, Bihar Board, 2007 - 2009

Secondary School, Jawahar Navodaya Vidyalaya, C.B.S.E., 2007

Personal Projects & Competitions Portfolio

1. Won 2nd Prize (Global Conversational AI Challenge - 2021) across all member firms of Deloitte (Among 30+ Teams)
2. Has cross-trained over 500 colleagues in Statistics, Data Science and AI as part of AI Org initiative in HCLTech.
3. Competed in Kaggle's "Predicting Future Sales" (Top 10% of the participants)