

# VAISHNAVI VARANASI

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## WORK EXPERIENCE

- University at Buffalo, Research Assistant- Data Science** *Present*
- Development of scalable data pipelines integrating real-time and batch processing, automating feature extraction and orchestration to transform multi-source raw data into reliable, model-ready inputs for machine learning workflows.
- Adani Wilmar Limited (CPG), Assistant Manager- Data Analytics, Ahmedabad, India** *April 2023–May 2024*
- Specialized in Data Science and Advanced Analytics delivering end-to-end solutions from use case formulation to technical development and deployment for internal stakeholders.
  - Led 3 impactful projects leveraging statistical modeling and machine learning to drive a **15-20%** improvement in sales efficiency, optimize **\$240K** in marketing spend and enhance product availability by 12% across retail zones.
  - Optimized salesmen route planning through TSP-based optimization using K-Medoids clustering and Gaussian Mixture Models, cutting average daily travel by **1.8 miles** per salesman and reducing carbon emissions by **2.5kg**.
  - Designed and executed A/B testing to evaluate two trade promotion schemes across Tier 1 and Tier 2 cities, identifying a clear winning strategy that increased primary sales by **12%** and improved ROI by **15%**.
- Adani Wilmar Limited (CPG), Executive- Data Analytics, Ahmedabad, India** *October 2020 –March 2023*
- Performed customer segmentation using RFM and K-Means Clustering, enabling targeted retention and replacement strategies. Increased Customer Lifetime Value by **75%**, from **\$68K to \$120K**.
  - Built a real-time Power BI tracker integrated via API with sales systems and enhanced with an AI voice-enabled chatbot for daily updates cutting manual reporting by **80%**, reducing issue response time by **40%**.
  - Worked on data analysis projects including geo-fencing and buying pattern analysis, which identified **30,000** ghost retail outlets, improving data quality by **15%** and enabling more accurate route planning in subsequent projects.
- Bennett Coleman and Company Limited (Media), Intern- Data Analytics, Mumbai, India** *April 2019–May 2019*
- Applied statistical techniques and time series models (ARIMA, Holt-Winters) to forecast daily newspaper sales.
  - Developed a forecasting solution and integrated it into an interactive Power BI dashboard for leadership use.
  - Enabled data-driven sales planning for The Times of India newspaper at key depots in Mumbai, improving forecast accuracy over **85%** and streamlining distribution operations across 10+ major depots.

## EDUCATION

- University at Buffalo, The State University of New York** *June 2025*
- MS in Business Analytics (STEM)
- Symbiosis International University, Pune, India** *April 2020*
- MBA, Data Sciences and Data Analytics
- Sri Indu College of Engineering and Technology, Hyderabad, India** *May 2016*
- Bachelor of Technology, Electronics and Communication Engineering

## PROJECT EXPERIENCE

- Hybrid Movie Recommendation System using Spark ML, TensorFlow & H2O.ai**
- Built a hybrid recommendation engine on MovieLens using ALS, autoencoders, and ensemble models, achieving a **15% improvement in RMSE** over standalone methods and generating personalized top-N recommendations for 100K+ users.
- Gen AI Practicum: Research Paper Summarizer & Recommender for UB Centre for AI business innovation**
- Developed a fully functional web-based AI research assistant using Retrieval Augmented Generation (RAG) and Semantic API integrations. Enabled users to search topics, retrieve academic papers, generate AI powered summaries, and identify UB faculty working on similar topics. Improved research discovery speed by **40%**.

## SKILLS

- Programming Languages:** Python, SQL, R
- Data Analysis & ML:** Pandas, NumPy, PySpark, Data Cleaning, Feature Engineering, Supervised & Unsupervised Learning, Spark ML, Predictive Modeling, Model Evaluation, RAG Pipelines, LangChain, LlamaIndex, OpenAI GPT, Hugging Face Transformers, Google Gemini
- Visualization & BI:** Matplotlib, Seaborn, Power BI, Tableau, Excel
- Cloud & Big Data:** Google Cloud (BigQuery, Vertex AI), Vector DBs (Pinecone, Chroma), Distributed Computing
- Web & Backend Tools:** Flask, Beautiful Soup
- Tools & Workflows:** Jupyter Notebooks, Git & GitHub, Dashboard/Reporting