

PRADYUMNA BADA

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EDUCATION

University of Illinois, Urbana - Champaign | GPA 3.8/4

May 2025

Master of Science, Industrial Engineering - Advanced Analytics

Coursework: Data Mining, Data Visualization, ML Cloud(AWS), Big Data Analytics, Network Optimization, Machine Learning

JSS Science and Technology University | GPA 8.5/10

Nov 2020

Bachelor of Engineering, Industrial Engineering

Coursework: Operations Research, Statistical Quality Control, Linear Algebra, Supply Chain, Advanced Calculus, C Programming.

SKILLS

Programming: Python, **SQL(Oracle)**, AWS, NoSQL, **MongoDB**, Data Modeling, PostgreSQL, Docker, R, GITLAB, Flask API

Data Science: Pandas, PySpark, Tableau, **PowerBI**, Databricks, Redshift, **Demand Forecasting**, Data Lakehouse, AWS Sagemaker.

Other Skills: Scikit-Learn, Power Query, Data Storage Systems, Lucid Charts, Social Research, Generative AI, Web Scraping.

PROFESSIONAL EXPERIENCE

Cline Center for Advanced Social Research | Research Assistant

Sep 2023 - Present

- Engineered data pipelines to extract structured data from 1000+ news articles every day, tracking police use of lethal force.
- Utilized MongoDB, Vector DB(FAISS) & AI for clustering & deduplication, cutting manual processing time by 67% (80 hours/week).
- Led end-to-end data workflow, from web scraping, data cleaning, MySQL schema design to a national Power BI dashboard ([Link](#)).

Seagate Technology | Data Analyst Intern

May 2024 - Aug 2024

- Implemented **ETL** pipelines to process and analyze high-volume data for characterizing emerging memories (FeRAM).
- Developed predictive models for failure metrics to ensure reliability & Integrated CI/CD pipelines using GitLab & Jenkins.
- Designed a Python-based workflow to extract data from a **Postgres** DB, transform it using PySpark, & generate automated reports.

RailTEC at Illinois | Summer Research Intern

May 2023 - Aug 2023

- Implemented a Vision AI-based tool for railway track inspection, potentially reducing time from nearly 2 weeks to just 3 hours.
- Utilized Databricks, Azure Synapse, & PySpark to analyze periodic data for tracking and **forecasting** rail component **health**.
- Developed Flask-based REST API endpoints to securely deliver real-time data & created visualizations using Power BI & Python.

Sapiens International Corporation | SQL Developer

Mar 2021 - Nov 2022

- Enhanced our Insurtech product using SQL & ETL, enabling **£250k** annual reduction in legacy insurance operational costs.
- Developed reporting interfaces using SQL and Scripting, including 'ECASS', a cache facility designed for client's actuarial team.
- Crafted robust SQL scripts to resolve 50+ critical data issues, ensuring data accuracy across policy, claims, & customer datasets.

ACADEMIC PROJECTS

Predictive Maintenance of Milling Machine | Tools: Python, Jupyter Notebook, Scikit-learn. ([Demo](#))

Goal: To predict milling machine failures using real-time performance measures and features to ensure continuous production.

- Developed and compared different ML algorithms using Grid Search CV to achieve an accuracy of 97%.

Inventory Optimization with Demand Forecasting | Tools: Python, SimPy, Prophet, Streamlit, Plotly. ([Demo](#))

Goal: Develop an end-to-end solution for inventory optimization incorporating demand forecasting and simulation.

- Built a stochastic simulation framework using Prophet forecasts (with user-defined scenarios) to evaluate inventory policies.

Predictive Modeling for Failure Prevention in Scania Truck Air Pressure System (APS) | Tools: Python, GitHub, MICE. ([Link](#))

Goal: Develop a cost-based model to predict and minimize failures, considering the costs of unnecessary checks & breakdowns.

- Performed EDA, & data imputation to develop various ML models, including LR, KNN, DT, RF & used Grid Search CV to compare it.

Stock Price Forecasting Using News Sentiment Analysis | Tools: Python, Streamlit, Prophet. ([Link](#))

Goal: Develop an interactive web app to forecast stock prices by integrating sentiment analysis of financial news.

- Used a pretrained model for sentiment analysis and Prophet for forecasting, delivering a dynamic dashboard with real-time plots.

LEADERSHIP & INVOLVEMENT

- Ensured timely meal service for hundreds of students daily through food servicing, dish cleaning, and table sanitation.
- Led the development team in resolving high-priority production issue in the absence of senior team members.
- Organized multiple treks to the Great Himalayan Ranges for groups of more than 10.
- Collaborated on creative projects, including short films & travel vlogs. [Video1](#), [Video2](#), [Video3](#), [Video4](#),

CERTIFICATIONS

- [Applied Plotting in Python](#), [Python Data Structures](#), [Databricks](#), [Prompt Engineering](#), [LLM Transformers](#)