

# DEBADRI SANYAL

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## PROFILE

Data Science professional with 3 years of experience building scalable ETL pipelines and predictive models within the Healthcare and Insurance sectors. Specializing in Advanced Machine Learning, Statistical Modeling, and Big Data Architecture. Expert in Python, SQL, and ML/DNN. Automating complex data workflows and implementing ensemble learning techniques to drive a 25-35% increase in operational efficiency. Passionate about leveraging quantitative analysis and AI to transform raw data into high-impact business decisions

**Skills:** Proficient in Python, SQL, ML regression/classification, Scikit-Learn, Pandas, NumPy, Matplotlib, Seaborn, Quantitative Modelling, Data Wrangling, Feature Engineering, Model Evaluation, Statistical Analysis, ETL Pipelines, Time-series forecasting, Simulation frameworks, hypothesis formulation, Ensemble models, Risk Modelling

**Certifications:** Datacamp Associate Data Scientist, AI-900: Microsoft Azure AI Fundamentals, Datacamp Python Data Fundamentals, Datacamp SQL Fundamentals, SAS AI-foundations-knowledge-badge, SAS-SQL-Essentials-knowledge-badge

## EDUCATION

**Purdue University, Daniels School of Business**

*Master of Business Analytics and Information Management, GPA: 3.8/4.0*

**West Lafayette, IN**

**December 2026**

**Vellore Institute of Technology**

*B.Tech Electronics and Instrumentation Engineering, GPA: 3.5/4.0*

**Vellore, Tamil Nadu, India**

**June 2022**

## ACADEMIC PROJECTS

**PURDUE University, Datacamp Data4Good Competition**

*AI Factuality Detection | NLP & Ensemble Learning*

**West Lafayette, Indiana**

**November 2025 - January 2026**

- Developed a Weighted Soft-Voting Ensemble (HistGradientBoosting and Random Forest) to detect AI "hallucinations" in educational content, achieving a 93.54% Macro-AUC by integrating semantic similarity and dual-vectorization feature engineering. project ensures educational integrity by providing a scalable framework to statistically validate factuality of AI-generated responses against provided source contexts.

**PURDUE University, Mitch Daniels School of Business**

*Bankruptcy Prediction System | ML & Ensemble Optimization*

**West Lafayette, Indiana**

**October 2025 - December 2025**

- Engineered a Bankruptcy Prediction System achieving 91.7% AUC by deploying an optimized XGB/LGBM ensemble, utilizing SMOTE for class imbalance and L1/L2 regularization to ensure model robustness and feature selection across high-dimensional financial datasets.

**PURDUE University, Mitch Daniels School of Business**

*Computer Price Dynamics Analysis | Exploratory Data Analysis*

**West Lafayette, Indiana**

**August 2025 - October 2025**

- Analyzed 100,000 computer systems operating Python (Pandas, NumPy) and hypothesis testing to statistically validate impact of technical specs on market valuation, translating these insights into tiered pricing models and brand positioning strategies for product lifecycle optimization.

## PROFESSIONAL EXPERIENCE

**Deloitte USI**

*Data Analyst / ETL Engineer*

**Hyderabad, Telangana, India**

**September 2022 – August 2025**

- Scalable Data Engineering:** Architected and deployed automated Python-based ETL pipelines to integrate disparate healthcare datasets, improving delivery efficiency by 25% for a Large Healthcare foundation.
- Production Orchestration:** Leveraged Tidal Automation and Control-M to orchestrate 100+ end-to-end data workflows across 10 business units, reducing migration latency by 35% while maintaining strict data integrity.
- Advanced SQL Optimization:** Developed high-performance SQL validation frameworks leveraging Common Table Expressions (CTEs) and Window Functions to audit data quality, slashing manual verification cycles by 30%.
- Agile Technical Leadership:** Managed cross-functional pipeline bottlenecks for 10+ global units using Jira, optimizing delivery velocity by 20% and earning the Rising-star Award for technical execution.