Shilpa Ghosh

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Data Scientist (6+ years) skilled in predictive modeling, risk analytics, and data visualization across finance and healthcare. Proven track record in building 0 to 1 enterprise AI products while driving multi-million dollar ARR growth.

Skills

Programming: Python, R, SQL, SAS, STATA, MATLAB, VBA, RedCap
Platforms: Pandas, NumPy, PySpark, Jupyter, JIRA, GitHub, Microsoft Outlook, O365, Sharepoint, Airflow
Visualization & BI Tools: Tableau, Power BI, Dash (Plotly), ggplot2, Matplotlib

Experience

Dept. of Psychology, University at Buffalo (SUNY) | Research Assistant   Sep 2024 – Present

- **Reduced manual workload by 80%** by architecting and building an **LLM-based dynamic weekly CONSORT reporting pipeline**, optimizing participant tracking and outlining irregularities.
- Leveraged open-source LLMs to preprocess clinical survey data, standardizing responses, identifying inconsistencies, and highlighting key patterns for analysis and machine learning.

HSBC | Senior Analyst   Dec 2021 – Aug 2024

- Led the **redevelopment of acquisition scorecard models** using advanced statistical methods, accurately predicting customer acquisition trends and **generating GBP 1.2M in profits**.
- Designed and **automated real-time Tableau dashboards** to deliver real-time insights into lending trends, performance metrics, and risk management.
- **Improved risk mitigation by ~10%** by integrating external credit bureau data into the Risk Management System.
- Engineered master datasets by leading data management, extraction, and transformation, integrating internal and external data sources of the bank to drive high-impact projects.

PricewaterhouseCoopers SDC | Associate II   Feb 2021 – Dec 2021

- Prepared data analysis for financial modeling and reporting, ensuring compliance with US and Canada tax regulations for transfer pricing documentation based on client transactions.

Deloitte Haskins & Sells LLP | Senior Executive   Jul 2019 – Jan 2021

- Automated financial modeling to enhance transfer pricing efficiency and benchmarking.
- Built a platform to analyze financial ratios and profit margins, ensuring compliance with transfer pricing regulations.

Education

University at Buffalo SUNY, MS Data Science (CGPA: 3.792)   Aug 2024 – Dec 2025
(Machine Learning, Deep Learning, NLP, Predictive Modeling, A/B Testing, Big Data Systems)

University of Calcutta, BS and MS Economics   Aug 2014 – July 2019

Projects

- Developed a **predictive AI/ML model for estimating the probability of default (PD)** using borrower-specific and financial data. Built an **interactive Dash dashboard** with visualizations, filters, and KPIs for enhanced credit risk analysis.
- Conducted an in-depth analysis of **pension trends in the Indian economy**, evaluating budgetary allocations and their influence on consumption smoothing behavior, under the mentorship of *Dr. Ishita Mukhopadhyay*.
- Investigated the interplay between **FDI and the Indian pharmaceutical industry**, analyzing its impact on investments, exports, after-tax profits, and GDP growth, guided by *Dr. Mou Roy*.

Recognition & Volunteering

- Awarded **HSBC's 'Rising Stars'** for outstanding performance and recognized for climate advocacy and disaster relief volunteering efforts.