

DRIPTA SENAPATI

Assistant Director in HSBC

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SUMMARY

Data Scientist with 5+ years of experience in analytics domain. Has strong foundation in statistics with analytical and programming mindset. Proficient in developing robust solutions for business cases. Seeking opportunities to use my expertise in machine learning and technical tools to drive business value in global organizations.

EXPERIENCE

- ❖ **Assistant Director, HSBC** Mar 2026
Kolkata, India
 - Automated segregation of transactions based on transaction type and activity using LLM (gpt-5.4) reducing ~60% of manual effort and uplifting accuracy FC Detection model by ~4% using RAG architecture within Lang graph framework.
 - Spearheaded product roadmap and analytical strategy, bridging business requirements with scalable data solutions and defining KPIs to track measurable outcomes across teams.
 - Built and scaled a high-performing data science function by mentoring analysts, institutionalizing model development standards, and driving end-to-end deployment best practices.
- ❖ **Senior Analyst, HSBC** Mar 2024 — Feb 2026
Kolkata, India
 - Built and deployed scalable machine learning model using ANN and XgBoost ensemble model reducing false positives by ~20% and increasing recall by ~15%.
 - Automated the customer segmentation process end-to-end through python by applying PCA, K-Means, and 5 statistical testing to justify the segmentation output across large-scale financial datasets.
 - Developed scalable AML rule engines, calibrated rule engine thresholds and enhanced alert pipelines in financial crime; validated model compliance against global AML frameworks through rigorous impact analysis.
 - Developed python scripts to solve the manual reporting creations for country stakeholders which reduces time by more than 50%.
- ❖ **Analyst, HSBC** Sep 2022 — Feb 2024
Kolkata, India
 - Designed and statistically optimized country-specific AML detection thresholds across 10+ jurisdictions, applying risk-based segmentation to reduce false positive rates and improve signal-to-noise ratio in alert generation pipelines.
- ❖ **Senior Associate, WNS Global Services** Jan 2021 — Aug 2022
Gurgaon, India
 - Built NLP extraction pipelines over biomedical abstracts for automated entity tagging, improving data processing efficiency across large research corpora.
 - Developed a Python-based dynamic PDF table extractor with multi-format automated outputs, reducing manual effort in client delivery workflows.
 - Performed statistical analysis on structured and unstructured biomedical data (R, Python); built an OpenCV module for medicine ingredient detection from packaging images.
 - Designed and deployed REST APIs for analytics workflows, enabling scalable and modular ML model integration in production.
- ❖ **Data Scientist, Objectsol Technologies Pvt. Ltd.** Jan 2020 — Jan 2021
Kolkata, India
 - Built and integrated backend statistical algorithms and ML models into production software applications, ensuring reliable and scalable model performance.

- Developed a crop recommendation model using soil parameters (pH, Nitrogen, Potassium) and weather features (temperature, humidity) to deliver data-driven agricultural insights.
- Implemented real-time object detection using YOLOv3 + OpenCV, optimized for low-latency inference in live environments.

EDUCATION

❖ **University of Calcutta** 2018 — 2020

M.Sc. in Statistics | Specialization: Multivariate Analysis

❖ **University of Calcutta** 2015 — 2018

B.Sc. in Statistics

SKILLS

Financial Crime / AML	Risk-based modelling, Threshold tuning, Customer segmentation
Programming & Tools	Python, R, SQL, Flask, Shell scripting, Pandas, NumPy, Matplotlib, Seaborn, BigQuery, NoSQL DB
Machine Learning & AI Modelling	Linear Regression, Classification Models, XGBoost, KNN, K-Means, Decision Trees, PCA, Clustering, Feature Engineering, Model Validation, Deep Learning, Langchain, Langgraph
Natural Language Processing	NER, Sentiment Analysis, Text Processing, Seq2Seq modelling for Text Generation
Deployment & Cloud	API development (Flask, NodeJS), GCP, AWS

ACHIEVEMENTS

1. Network Watch

Developed "Network Watch" during the HSBC Hackathon, building a prototype for intelligent network monitoring with real-time diagnostics, anomaly detection, and AI-assisted insights, showcasing full-stack development and problem-solving skills.

<https://github.com/DriptaSenapati/network-watch>

2. AI Financial Advisor

Built an agentic AI financial assistant using LangChain, LangGraph, and OpenAI GPT-5.1 that parses bank statement PDFs, clusters transactions via semantic embeddings (MongoDB Atlas vector search), and auto-categorizes spending using LLM pipelines. Generates natural language insights and evaluates financial goal feasibility — powered by a fully automated multi-node LangGraph pipeline on Node.js + TypeScript.

GitHub: <https://github.com/DriptaSenapati/ai-advisor>

3. Epidemiological Model

Worked on a Covid-19 based project that applies SEIR epidemiological model to show whether the lockdown in India was effective or not. Explored LSTM model to predict future patterns of Reproduction rate.

4. Chatbot Using Seq2Seq Model

Built a chatbot using LSTM RNN (Seq2Seq) capable of generating meaningful conversational responses and real-time weather lookups.

GitHub: <https://github.com/DriptaSenapati/ChatBot>

5. Python Package

Created a Python package on Covid-19 that retrieves all numerical data related to the COVID-19 spread in India.

PyPI: <https://pypi.org/project/covdata/>

6. Statistics Chegg Expert

Worked part-time for 2 years as a Chegg Expert solving statistical problems.

7. Certifications

- Completed SQL & Database Design A-Z™: Learn MS SQL Server + PostgreSQL from **Udemy**
- Completed Machine Learning A-Z™: Hands-On Python & R In Data Science from **Udemy**

LANGUAGES

English

★★★★★

Bengali

★★★★★

Hindi

★★★☆☆

WEBSITES AND SOCIAL LINKS

GitHub: <https://github.com/DriptaSenapati>

Portfolio: <https://www.driptasenapati.com/>