ANKITA BOSE

Senior Data Scientist | Pharma Commercial & Healthcare Analytics | ML/AI | ThoughtSpot

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PROFESSIONAL SUMMARY

Senior Data Scientist with 5+ years of experience across pharma commercial, market access/value & access, payer/PBM, Health-System/340B and healthcare claims analytics. Combines statistical modeling, machine learning and analytics engineering to build patient-journey/referral analytics, HCP/HCO segmentation and targeting, AI-enabled self-service analytics products, MMx/ROI, forecasting, causal measurement and predictive HCP engagement solutions using Python, SQL, Redshift, Snowflake, Databricks and ThoughtSpot.

CORE SKILLS

Programming & Data Platforms	Python, SQL, R, PySpark, Databricks, Snowflake, Redshift, AWS, Google BigQuery, Excel, PowerPoint
Machine Learning & Forecasting	Regression, Classification, CatBoost, XGBoost, Random Forest, LSTM, RNN, Quantile Regression, K-Means, Hierarchical Clustering, Forecasting
Statistics & Measurement	Hypothesis Testing, Mixed Effects Models, Correlation Analysis, Feature Selection, Propensity Score Matching, Test-Control Design, A/B Testing, Causal Inference, MAPE, ROI
Data Science Engineering	ETL, Feature Engineering, Data Cleaning, Data Validation, Model Validation, Reproducible Pipelines, Automation, Documentation
BI, AI & Analytics Products	ThoughtSpot Model and Liveboard building, ThoughtSpot Spotter, Natural Language Querying, Generative AI, LLMs, SHAP, Optuna, Monte Carlo Simulation
Pharma, Claims, Market Access & Commercial Analytics	Pharma & Commercial Analytics, Market Access / Value & Access, Payer & PBM Analytics, Healthcare Claims, Patient Journey & Referral Network Analytics, Health-System & 340B Analytics, HCP/HCO Segmentation & Targeting, TRx / Market & Brand Volume, MMx, Omnichannel Analytics

PROFESSIONAL EXPERIENCE

GENPACT INDIA PVT. LTD. | Assistant Manager - Data Science — Aug 2024 - Present | Bangalore, India

- **ILD Referral & Diagnostic Journey Analytics:** Led longitudinal claims-based ILD analytics across Health Systems; built reusable Redshift SQL patient-account data marts and diagnostic funnels spanning non-ILD status to PFT/HRCT utilization across 12/18/24-month windows and subsequent ILD diagnosis, then extended the framework with PCP/Rheumatology/other-specialty to Pulmonology referral pathways, testing conversion, referral-to-diagnosis time and alternate care-pathway analysis using procedure, specialty, place-of-service and facility data.
- **AI-Powered PBM Intelligence & Cost Optimization:** Architected a dedicated ThoughtSpot semantic model and Liveboards integrating PBM member enrollment/lives, pharmacy claims, Rx transactions, rebate exposure, cost and financial KPIs; enabled Spotter/Natural Language Querying for self-service analysis of rebate performance, utilization and transaction trends, cost drivers and payer/PBM performance.
- **AI-Powered Health-System & 340B Analytics:** Built a separate ThoughtSpot semantic model and Liveboard suite integrating Health-System account, region and channel performance, HS standards, 340B chargeback metrics and patient/provider signals; enabled AI-assisted self-service analysis of account opportunity, 340B performance and commercial/value & access trends.
- **Health-System Segmentation & Targeting Automation:** Integrated HCP-level claims/commercial signals to parent Health Systems using affiliation hierarchies; performed statistical profiling and KPI screening across 340B density, net sales, Medicare/Medicaid density, CMP win, patient counts, nephrologist/cardiologist counts, market/TRx and brand volume, then normalized and weighted selected KPIs into a composite opportunity score and decile/tier framework. Evaluated clustering-based segmentation approaches alongside business-rule tiers and automated the end-to-end Python workflow with configurable user inputs, supporting approximately $500K in annual efficiency savings.
- **MMx & ROI Automation:** Developed Python-based marketing-mix and ROI pipelines using mixed-effects models, lag/adstock transformations, outlier treatment, contribution analysis, MAPE validation and retrospective ROI measurement to quantify national, segment and account-level promotional effectiveness.
- **HCP Predictive Engagement Optimization - ML/AI:** Built an end-to-end predictive modeling pipeline using sales, activity-log and suggestion data; engineered rolling-window, recency/frequency and temporal features, trained CatBoost quantile regression models with Optuna hyperparameter tuning, applied SHAP explainability and cosine-similarity imputation, and used Monte Carlo simulation for business-constrained next-best-message/sequence optimization.

AXTRIA INDIA PVT. LTD. | Senior Associate Decision Scientist — Jun 2022 - Aug 2024 | India

- **Omnichannel Forecasting & Impression Optimization:** Built Databricks Python/SQL pipelines integrating two years of multi-source customer-week data; developed LSTM/RNN forecasts with lag and rolling features and optimized HCP channel impressions using Genetic Algorithms and business rules for channel and call-frequency planning.
- **Vaccine Segmentation & Targeting:** Developed IDN/HCP segmentation and targeting strategy using promotion-response modeling, customer valuation, promotional sensitivity and workload/budget constraints to support portfolio prioritization.
- **Causal Impact & Test-Control Analytics:** Evaluated alert campaigns using propensity score matching (PSMPy), pre/post NBRx comparisons and lift/DoD measurement, translating causal results into evidence-based engagement and investment decisions.
- **Launch & Team Sizing Analytics:** Supported RBM sizing for a new eye-injection launch by identifying statistically significant workload drivers, building workload indices and delivering scenario-based staffing and prioritization recommendations.

IPSOS RESEARCH PVT. LTD. | Business Analyst **Jan 2021 - Jun 2022 | India**

- **Multi-Touch Attribution & Revenue Prediction:** Led attribution and revenue-prediction modeling for Fortune 500 advertisers across e-commerce and digital channels using Python, SQL, R and SAS to optimize media investment and conversion effectiveness.
- **Analytics Engineering & Measurement:** Built preprocessing, feature-engineering/selection and statistical-modeling workflows on AWS Redshift and Google BigQuery, integrating cloud and advertising-platform data and delivering stakeholder-ready campaign performance insights.

EDUCATION

M.Sc. Statistics and Data Science Major with Advanced Analytics | University of Kalyani | 2018 - 2020

B.Sc. Honours, Statistics Major with Computer Science and Mathematics Minor | University of Calcutta | 2015 - 2018

AWARDS & RECOGNITION

- Certificate of Recognition (Dec 2025) - Genpact: Recognized for consistent error-free outputs, exemplary performance and significant contribution to end-to-end HS modeling and Python/SQL automation within a short span of time.
- Bravo Award (Mar - Apr 2024) - Axtria: Awarded for consistent delivery of quality work under stringent timelines, positive client feedback and supporting new team members through knowledge transfer and onboarding.
- Game Changer Award (H2 2023) - Axtria: Recognized for significant contribution toward team and project objectives, passion, innovation and measurable business impact.
- Applause Award (Sept 2021) - IPSOS: Recognized for entrepreneurial spirit, innovative ideas, partnership with the US team and helping stand up a new product at IPSOS.
- Star of the Month Award (July 2021) - IPSOS: Recognized as a young team member for rapid transition and ownership of a large project at IPSOS.

TRAINING & PROFESSIONAL DEVELOPMENT

- Completed multiple Data Science, Machine Learning and Python courses from Udemy, covering practical modeling, automation and analytics workflows.
- Completed training on Databricks and ThoughtSpot, including analytics engineering, BI product development and self-service insight enablement.
- National Workshop on AI & ML from CIET, approved by AICTE.
- Course on Data Science using R from StepUp Analytics.
- 21-day Summer Training Course on Data Science from University of Kalyani.
- Workshop on Data Science: Decoding the Black Box from University of Calcutta.
- National Workshop on Statistics and its Application from Presidency University.

ADDITIONAL EXPERIENCE

- Subject Matter Expert - Statistics, Chegg India Pvt. Ltd. | Provided expert statistical solutions using R, Python and Excel.
- Guest Lecturer - Applied Statistics, Howrah Vivekananda Institution | Delivered lectures on descriptive and applied statistics, R/Python problem-solving and data science project guidance.