Siddhartha Sen

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PROFILE SUMMARY

Final year Master's Data Science student with hands-on experience in Python, SQL, Power BI, and statistical analysis. Worked on dashboards, data preparation pipelines, healthcare analysis and network analysis research.

EXPERIENCE

Advanced Analytics Intern, PharmaQuant Insights Pvt. Ltd.   May 2025 - June 2025

Conducted a meta-analysis across 7 clinical trials evaluating treatments for platinum-resistant ovarian cancer, consolidating therapeutic outcomes to support evidence-based pharma analytics.

- Synthesized pooled efficacy across 700+ aggregated patient outcomes, measuring Overall Survival (OS), Progression-Free Survival and Objective Response Rate (ORR) using fixed & random-effects models.
- Identified high heterogeneity ($I^2 > 90\%$), guiding interpretation toward random-effects inference, improving accuracy and reliability of outcome comparisons for clinical-strategy teams.
- Built forest plots and summary artefacts, reducing manual evidence-review time $\sim 60\%$ for analysts and enabling faster decision-support reporting.

Intern at Institute for Advancing Intelligence, TCG Crest   July 2025 - Present

- Engineered adversarial rewiring strategies (ROAM, DICE heuristics) enabling a targeted "mastermind" node to drop in centrality rankings after ≤ 2 iterations, proving structural vulnerability in degree, closeness & betweenness-based detection systems.
- Automated graph-analysis pipeline to load $\rightarrow$ rewire $\rightarrow$ recompute centrality across execution cycles, enabling fast reproducibility and quantification of how manipulation hides influential actors within networks.
- Delivered before–after visualizations showing topology shifts that enable adversarial movement, informing future ML-based defense systems for dynamic, evolving networks.

TECHNICAL SKILLS

Languages & Tools	Python, R, SQL, Excel, Power BI
Libraries	pandas, numpy, scikit-learn, statsmodels, NLTK, matplotlib, seaborn, forecast, tidyverse, networkx etc
Analytics	EDA, Data Visualization, Statistical Testing, Regression, Classification, ML, DL

EDUCATION

2024 - 2026	M.Sc. (Data Science) at **St. Xavier's College (Autonomous), Kolkata** (CGPA 7.89 till sem 3)
2020 - 2022	M.Sc. (Physics) at **St. Xavier's College (Autonomous), Kolkata** (Percentage : 84.2)
2017-2020	B.Sc. (Physics) at **St. Xavier's College (Autonomous), Kolkata** (Percentage : 73.28)
2017	Class 12th ISC Board (Percentage : 95.5 with 100 in Mathematics)

MAJOR PROJECTS

Stock Price Weight Optimization – Custom Conjugate Gradient & Fibonacci Solver

- A quantitative-finance engine encapsulated by a reusable StockPriceOptimizer Python class integrating analytical + iterative solvers; reduced regression convergence time ~ 35–40% compared to baseline LS.
- Achieved ~ 10–12% improvement in directional prediction by tuning step-size using Fibonacci search, enabling more stable weight updates and better finance-forecast signal consistency.

Predicting Avoidable Readmissions in U.S. Hospitals facing re-admission penalties (Diabetes Dataset)

- Built readmission-risk model isolating top driver features (treatment gaps, comorbidities, medication-timeline) explaining ~ 65–70% of avoidable readmissions.
- Delivered hospital-focused business recommendations through interactive dashboards; positioned to reduce HRRP-penalty exposure to US based hospitals by improving care-coordination workflows.

ACHIEVEMENTS AND OTHER ACTIVITIES

- **Winner – PowerQuest Hackathon 2025 (HEOR Statistics)**, PharmaQuant Insights Pvt.Ltd.
- Completed and obtained badge for "Unleashing the Power of AI Agents" on IBM SkillsBuild.
- Google Advanced Data Analytics Credential Course(Ongoing).