

Sudipta Banerjee

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EDUCATION

Illinois Institute of Technology, Chicago, IL

AUG 2023 - MAY 2025

Master of Computer Science (M.A.S), GPA: 3.5

SRM Institute of Science & Technology, Chennai, India

JUL 2016 - JUN 2020

Bachelor of Technology (B.Tech - Engineering), ECE, GPA: 3.7

SKILLS

- **DATA ANALYSIS:** Advanced Excel (Power Query, PivotTables, DAX, Macros, VLookup) | Data Wrangling/ETL
- **DATA VISUALIZATION:** Tableau | Power BI | Matplotlib | Data Storytelling | Interactive Reporting
- **DATA ENGINEERING:** ETL Pipeline Development | SSIS | Data Warehousing | Data Architecture
- **PROGRAMMING & AUTOMATION:** Python | Powershell Java | JavaScript | Node.js (APIs) | Bash Scripting
- **BIG DATA & CLOUD:** Apache Spark | Hadoop | AWS (S3, EMR) | Cloud Architecture Pattern | Data Ingestion
- **DATABASES:** MySQL | PostgreSQL | Database Design | Database Optimization
- **MACHINE LEARNING:** Predictive Modeling (Random Forest, KNN) | Regression Analysis | Statistical Modeling
- **TOOLS & DEVOPS:** Git | Docker | Jenkins | Postman | Jira | Confluence | SDLC | IBM API-Connect | IBM Datapower

WORK EXPERIENCE

APPLICATION DEVELOPER

JUL 2021 – JUN 2023

IBM, Bangalore, India

- Engineered Node.JS utility to automate API-Connect V5 app creation, reducing manual workload by 80%, driving 100% YoY performance growth for Lloyds Banking Group (UK banking client).
- Enforced Risk, Compliance standards, integrating OAuth 2.0, OpenAPI Swagger, ensuring GDPR/PSD2 for banking APIs.
- Deployed CI/CD pipeline, resulted 30% reduction in product development lifecycle, leveraging Nexus, Git, Jenkins, showcasing efficacy, acceleration in software delivery.
- Automated 70% API tests using Postman & JUnit, conducting manual testing to validate API functionality & system integration, reducing 25% defect leakage, enabling data platform transformation.
- Enhanced system stability through comprehensive API & regression testing, effectively resolving Sev-1 incidents by deploying message-signing certificates in DataPower, conducting thorough debugging.

RESEARCH ANALYST INTERN

NOV 2019 - MAR 2020

Defense Research Laboratory, Assam, India

- Implemented streamlined SQL database to compare Langmuir and Freundlich adsorption data models. Analysis revealed optimal material performance (Separation Factor (RL): 0.022-0.065, Adsorption Capacity (qm): 2.568 mg/g), eliminating data silos and driving 15% improvement in material efficiency.
- Automated data transformation using Power Query, validated Langmuir & Freundlich adsorption models using Excel pivot tables, dynamic arrays. Engineered DAX measures with cascading slicers for real-time parameter validation, achieving 100% accuracy ($R^2=1$), reducing analysis time by 30% via nested lookups, macros to accelerate experimental iterations.
- Engineered interactive Tableau dashboards featuring scatter plots & dual-axis charts, comparing Langmuir vs. Freundlich isotherms, highlighting favorable adsorption trends (separation factor $RL < 1$). Embedded tooltips with Freundlich parameters such as a Freundlich constant (KF), adsorption intensity (n) to validate Iron-coated PMMA's adsorption equilibrium capacity and fast-track its adoption in water treatment systems. Spearheaded a Research Paper to support the analysis.

PROJECT EXPERIENCE

- **Crime Analysis and Prediction (Python, Spark, Hadoop, AWS Cloud, Tableau):** Established efficient Big Data storage processing system, leveraging AWS cloud architecture patterns (EMR/S3) using Hadoop, Spark, visualizing trends in Tableau to process 20+ years of Chicago Crime Data (2001–2021) with 30% higher efficiency in data aggregation. Designed predictive models with KNN and Random Forest to classify crime types with 85% accuracy.
- **Cricket Analysis (SQL, Excel, Tableau):** Designed an interactive dashboard showcasing Team Analysis, Batting Statistics (ranked by highest scores), and Bowling Statistics (ranked by most wickets). Cleaned 10,000+ records using SQL, transformed data with Excel, and visualized KPIs in Tableau, driving a 25% improvement in decision-making efficacy.
- **Women's FIFA World Cup 2023 Database System (Python, MySQL, Tkinter):** Architected a comprehensive Database Management System, processing 64 matches, 32 teams, 736 player profiles using advanced SQL functions. Designed normalized schemas for efficient data management, resulting in 30% faster query performance and seamless real-time tournament tracking.
- **Valentine's Day Consumer Behavior Dashboard (Excel, PowerQuery, Tableau):** Designed interactive tableau dashboard visualizing consumer spending patterns, gift preferences across demographics, analyzing relationship status correlations, age group distributions, gender-based preferences, showcasing spending ranges, gift category preferences, improving retail targeting insights 20%.

LEADERSHIP EXPERIENCE

- **Event Coordinator (Indian Student Association, IIT Chicago):** Successfully coordinated cultural events for 200+ students, enhancing campus engagement, diversity, inclusivity, championed leadership development through cross-functional collaboration, mentoring student volunteers, streamlining event execution.