SIDDHI NIRMALE

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SUMMARY

Data Science professional with experience in analytics, data pipelines, and applied machine learning, backed by industry experience as a Software Engineer at HSBC. Skilled in translating large-scale data into actionable insights through predictive modeling and stakeholder-facing analytics.

EDUCATION

Northeastern University **Sep 2025 - May 2027**
Masters in Data Science ***GPA:4/4***
Current Coursework: *Machine Learning, Algorithms, Essentials of Data Science, R, Visualization*

Pune Institute of Computer Technology **Jul 2018 - Jul 2022**
Bachelors in Electronics and Telecommunications ***GPA:3.6/4***
Relevant Coursework: *Database Management, Probability & Statistics, Data Mining, Capstone Experiences*

WORK EXPERIENCE

Software Engineer **Aug 2022 - Aug 2025**
HSBC Technologies *India*

- Built and maintained scalable data pipelines using Kubernetes and Python to preprocess large-scale inventory and compliance datasets, reducing analytics turnaround time by **30%** for business teams.
- Applied data analysis and anomaly detection techniques to identify data quality issues and operational risks, supporting evidence-based decision making across finance and risk functions.
- Automated data validation and compliance workflows (ICE) using **Python and Jenkins**, improving regression testing reliability by **70%** and significantly reducing manual review effort.
- Developed Python-based data integration processes between Active Directory and Azure systems, enabling real-time synchronization and improving data accuracy by **40%** across distributed platforms.
- Performed traffic and usage analysis using AppDynamics to identify underutilized APIs, driving **25%** infrastructure cost reduction through data-backed optimization.
- Delivered analytical reports and scenario-based insights to finance and risk stakeholders, supporting business continuity planning, cost optimization, and regulatory compliance.

PROJECTS

E-commerce Market Basket and Sentiment Analysis **Dec 2025**

- Built a sentiment-aware recommendation system by applying **Apriori** on **100K+ transactions** to generate association rules (support, confidence, lift)
- Integrated **BERT-based review sentiment**, improving cross-sell relevance and recommendation quality.

Customer Engagement Analytics – American Express **Jun 2025**

- Engineered features from customer-event and offer datasets and developed predictive models to estimate offer acceptance, improving **CTR prediction performance** through optimized preprocessing, categorical encoding, and model tuning in **Python**.

Hospital Readmissions Analysis **Apr 2023**

- Conducted exploratory data analysis and built a **logistic regression** model achieving **78%** accuracy to identify key drivers of 30-day hospital readmissions, translating findings into data-driven reduction strategies.

TECHNICAL SKILLS

Languages: Python, SQL, R, C++
Data & Analytics: Pandas, NumPy, PySpark, ETL, Feature Engineering, Data Cleaning, Exploratory Data Analysis (EDA)
Machine Learning: Scikit-learn, TensorFlow, PyTorch, LightGBM, XGBoost, Model Evaluation
Visualization & BI: Tableau, Power BI, MS Excel, Matplotlib, Seaborn
Databases: PostgreSQL, MySQL
Cloud & Data Platforms: AWS (S3, EC2, RDS, Lambda), Docker, Kubernetes, Terraform, Git

ADDITIONAL EXPERIENCE

Teaching Assistant – Algorithms, Northeastern University **Jan 2026 – Present**

- Supported instruction for a graduate-level algorithms course, assisting students with advanced algorithm design, asymptotic analysis, recursion, dynamic programming, and correctness proofs.
- Led office hours and problem-solving sessions focused on translating theoretical concepts into efficient, implementable solutions.

Research Apprentice, Pune Institute of Computer Technology **Nov 2021 – May 2022**

- Conducted research on an image processing–based vehicle number plate recognition system (“Virtual Valet”) and served as lead author on a peer-reviewed publication for automated parking applications.