# SIDDHI NIRMALE

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## SUMMARY

*MS Data Science student at Northeastern University with 3 years of software engineering experience at HSBC. Strong background in machine learning, scalable data pipelines, and predictive modeling across customer analytics, healthcare, and computer vision, with hands-on experience deploying data-driven solutions.*

## EDUCATION

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

**Pune Institute of Computer Technology** **July 2018 - July 2022**
*Bachelors in Electronics and Telecommunications* ***GPA:3.6/4***
**Relevant Coursework**: *Database Management, Mathematics and Statistics, Programming for Data Science, Capstone Experiences*

## WORK EXPERIENCE

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

- Built a **Kubernetes-based data pipeline** for large-scale inventory data, enabling faster preprocessing, anomaly detection, and improving analytics turnaround by **30%** for business teams.
- **Automated** validation workflows for compliance data (ICE) using **Python, Jenkins, and rule-based models**, improving regression testing speed and reliability by **70%**, and reducing manual review.
- Developed **Python scripts** for Active Directory–Azure data integration, ensuring **real-time data synchronization and quality monitoring**, which improved data accuracy across distributed systems by **40%**.
- Migrated **100+ data-heavy APIs and applications to AWS**, optimizing data flow architecture and enabling **real-time log analytics**, supporting predictive monitoring and business insights.
- Performed **traffic data analysis** with AppDynamics to identify underutilized APIs, reducing infrastructure costs by **25%** and improving system efficiency through evidence-based decision making.
- Applied **scenario modeling and data analysis** to design a business continuity strategy, supporting **risk prediction**, operational resilience, and compliance planning

## PROJECTS

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

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

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

- Performed data preprocessing and feature engineering on customer-event and offer data to predict offer acceptance. Used **LightGBM** to build a high-performance model, improving Click-Through Rate (CTR) prediction. Tasks included data merging, handling categorical features, and optimizing model performance using **Python** and pandas.

**Hospital Readmissions Analysis** **April 2023**

- Analyzed patient data, conducted EDA, and built a logistic regression model with 78% accuracy to identify factors contributing to 30-day hospital readmissions and proposed strategies for reducing them.

**License Plate Validation App** **November 2021**

- Developed a web application using **EasyOCR**, **TensorFlow**, and Django to capture and authenticate license plates, achieving 88% accuracy with a dataset of 1,200 images. Used Django for user interaction and Jupyter Notebook for model training and execution.

## TECHNICAL SKILLS

**Programming Languages & Libraries:** Python, C++, R
**Databases:** SQL, PostgreSQL, MySQL, Access
**Big Data & ML Tools:** PySpark, Hadoop, TensorFlow, PyTorch, Scikit-learn, LightGBM, XGBoost
**Visualization & Tools:** Tableau, PowerBI, MS Excel, Powerpoint, Jupyter, Matplotlib, Seaborn, Qlik
**Cloud & Data Platforms:** AWS (EC2, S3, RDS, Lambda), Terraform, Docker, Git, Kubernetes
**Web Technologies:** HTML, CSS, JavaScript, Django, Flask, FastAPI

## KEY ACHIEVEMENTS

- **Published Research Paper**: Published a research paper in the "International Journal for Research in Applied Science and Engineering Technology, Volume 10, Issue V" as the lead of the project.
- **Circle of Excellence**: This recognition came as a result of my dedication to teamwork, effective problem-solving, and commitment to project success.