

Ritvik Gupta

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AI/ML Engineer with 2 years of experience designing, training, and deploying machine learning and NLP systems using Python, SQL, PySpark, and AWS. Strong foundation in model development, data preprocessing, cloud workflows, and production deployment (Docker, MLflow). Skilled in building end-to-end AI solutions that improve performance, automate processes, and align with business needs.

Education

Boston University | *Master of Science, Applied Data Analytics*

2023 - 2025

SRM Institute of Science and Technology

2019 - 2023

Bachelor of Technology (B.Tech.), Computer Science and Engineering

Skills

- **Machine Learning & AI:** Regression, Classification, XGBoost, scikit-learn, MLlib, NLP, Time-Series Forecasting, Recommender
- Systems, Deep Learning (CNNs), LLM Integration
- **Programming & Analytics:** Python, SQL, R, PySpark, Advanced Excel, PostgreSQL
- **Data Engineering & ETL:** Apache Spark, SQL-based ETL, Data Modeling, Kafka
- **Cloud & MLOps:** AWS (S3, EMR, Lambda), Databricks, MLflow, Docker, CI/CD, Model Deployment
- **Visualization & Reporting:** Power BI, Excel Dashboards, KPI Reporting

Work Experience

The Chicago Education Advocacy Cooperative | *Data Science Fellow*

Jun 2025 - Present

- Designed and trained predictive ML models in Python/R to enhance budget forecasting accuracy by 25%, directly improving multi-department resource allocation and planning efficiency.
- Built and deployed anomaly-detection pipelines that flagged cross-system irregularities with 15% higher precision, reducing operational inefficiencies and enabling faster, data-backed decisions for leadership.

BU Faculty of Computing & Data Sciences (CDS) | *Graduate Teaching Assistant*

Aug 2024 - May 2025

- Mentored 80+ graduate students in Python, data engineering, and applied ML, resulting in 30% higher project completion rates and improved course evaluations.
- Enhanced curriculum by integrating real-world datasets and coding challenges, leading to 20% improvement in student performance on ML assessments.

ENGAGEathon | *Data Analyst Intern*

May - Aug 2024

- Led a team of data analysts to engineer automated ETL pipelines across 9+ enterprise systems using Python and SQL, lowering manual reporting efforts by 60% while maintaining high data integrity across multi-source workflows.
- Designed and deployed Power BI KPI dashboards integrated with real-time ETL outputs, giving executives clear performance visibility and helping reduce latency incidents by 18% while improving throughput optimization.

Boston University | *Teaching Assistant*

Jan - Dec 2024

- Guided students on ML pipeline optimization, enhancing runtime efficiency by 35% through scalable preprocessing and distributed training techniques.
- Supported 100+ students in model debugging and evaluation, raising average course satisfaction scores.

Enhanced Communications & Technologies PVT. LTD. | *Python Developer Intern*

Mar - May 2021

- Built and deployed a cloud-based AI chatbot on WhatsApp, automating customer interactions and reducing manual workload by 40%.
- Developed real-time message automation pipelines serving 5,000+ end users, significantly improving communication efficiency.

Technical Projects

Scalable Recommendation Engine with PySpark & AWS

Jan - May 2024

- Implemented ALS, FAISS, and KMeans in a hybrid recommendation system to deliver personalized article suggestions, enhancing user engagement and content discovery.
- Designed a scalable pipeline using PySpark, AWS EMR, and S3 for large-scale processing, improving system performance and accuracy.

Predictive Stock Market Algorithm

Sep - Dec 2023

- Designed and implemented a customized predictive stock market algorithm, integrating ARIMA, regression models, and tailored feature engineering to achieve 85% directional accuracy on daily price movements.
- Built scalable ML workflows for risk and volatility modeling, enabling robust evaluation, faster experimentation, and optimized decision-making for trading strategies.

Publications

- Analyzing sector performance and investment strategies: A decade of FTSE data — *IJEFM*, 2025

Link: <https://doi.org/10.55284/811.v10.i1.1663>

- Face Mask Detection using Deep Learning CNN Architecture — *IJSER*, 2022

Link: <http://www.ijser.in/archives/v10i12/SE221206135738.pdf>

- *Secure Data Systems & Compliance* — *IJSER*, 2023

Link: <http://www.ijser.in/archives/v11i8/SE23822002659.pdf>