

# UTKARSH GUPTA

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## EDUCATION

### DUKE UNIVERSITY, THE FUQUA SCHOOL OF BUSINESS

Durham, NC

#### **Master of Science in Quantitative Management: Business Analytics (STEM)**

May 2025

**Selected Coursework:** Data Science for Business, Applied Statistics, Data Visualization, Data Infrastructure, Strategic Decision Analytics, Empirical Economic Analysis, Enterprise Risk Management, Fraud Analytics, Cybersecurity, AI/ML, Deep Learning, Neural Networks.

### SRM INSTITUTE OF SCIENCE AND TECHNOLOGY

Chennai, India

#### **Bachelor of Technology: Computer Science and Engineering**

Jun 2024

**Research paper:** *Psychological Analysis Using Social Media Tweets* at IEEE 2024 3rd International Conference on Applied Artificial Intelligence and Computing.

## SKILLS

**Tools & Tech:** SQL, Python (NumPy, Pandas, Scikit-Learn, PyTorch, TensorFlow, Keras, XGBoost), R, Tableau, Power BI, Jupyter Notebook, Advanced Excel (Power Query, VBA), Hive, Jira, DataBricks, Snowflake, Azure, Alteryx, Looker Studio, Spark, HPC, GCP  
**Modelling & Analytics:** A/B Testing, Market Research, Strategic Insights, Data Synthesis, Regression, Clustering, Hypothesis Testing, Predictive Modelling, Data Mining, Forecasting, Financial Modelling & Reporting, Portfolio Monitoring.  
**Certifications:** AWS – Cloud Security Foundations, Oracle Academy – Database Foundations, IBM – Data Analysis with Python

## EXPERIENCE

### DUKE HEALTH, Fuqua Capstone

Durham, NC

#### **Student Analyst & Consultant**

Mar – May 2025

- Analyzed 500K+ patient records across EMR, claims, and public health datasets using SQL and R; identified **12% improvement in early diagnosis rates** for NCDs post-Medicaid expansion.
- Built Tableau dashboards used by 10+ policy stakeholders, highlighting regional disparities and care gaps; findings directly influenced **3 strategic initiatives** in Duke Health's Medicaid outreach program.

### HCLTECH, Analytics Team

Noida, India

#### **Business Analyst Intern**

Jan – Jun 2024

- Analyzed 100GB+ of Microsoft Bing search interaction data to uncover product usage trends, driving **20% improvement in user engagement** and informing strategic product and marketing decisions.
- Built automated data pipelines and optimized SQL workflows to support A/B testing, cohort analysis, and real-time user tracking, **reducing data processing time by 40%** and **query execution time by 25%**.
- Developed dynamic **Power BI dashboards** to visualize product KPIs and feature adoption metrics, **boosting reporting efficiency by 30%** and enabling faster, insight-driven decision-making for cross-functional teams.

### SIEMENS LOGISTICS, IT

Gurugram, India

#### **Data & Operations Analyst Intern**

May – Jul 2023

- Conducted in-depth performance analysis of baggage handling systems to identify product bottlenecks and efficiency gaps; delivered actionable insights that supported automation strategy and roadmap decisions.
- Evaluated and enhanced the Basic Bag IQ product for microservices deployment, contributing to a **14% increase in system scalability and accuracy**, aligning with product growth objectives.
- Developed and implemented Java-based automated error detection, optimized database queries, resulting in a **20% increase in baggage throughput & 15% reduction in operational error rates**, enhancing real-time system reliability and efficiency.

## SELECTED PROJECTS

**Analyzing Psychological Traits Using Social Media Tweets (Python).** Designed and fine-tuned LSTM and CNN models on 50K+ tweets, achieving **99.02% classification accuracy** in detecting depression-related content. Conducted sentiment and temporal analysis to uncover key social and linguistic factors linked to depressive behavior.

**Causal Analysis of Customer Outreach on Bank Subscription Rates (R, Python).** Analyzed 4500+ banking clients using PSM, DiD, Causal Random Forests to quantify outreach effectiveness. Identified initial contact increased subscription rates by 11.1%. Repeated calls decreased by 2.6%. Delivered data-driven recommendations to improve marketing ROI, reduce outreach costs.

**Semantic Analytics Engine for Vendor Ranking for Pyramid AI (Python, FastAPI).** Built a FastAPI-based analytics engine for vendor qualification, leveraging MiniLM embeddings and KeyBERT to extract 20-keyword profiles from 1,000+ CRM tools. Designed a weighted scoring model (60% semantic similarity, 10% token overlap, 30% normalized ratings) to rank vendors with high relevance and decision-making **precision**.