

SURYA YOGANANTHAN

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EDUCATION

Master of Science in Business Analytics, *Northeastern University, Boston, MA* **Dec 2025**
Specialization: Data Mining, Forecasting Models, ETL Processes, Data Visualization, Hypothesis Testing
Bachelor of Technology in Mechanical Engineering, *Sastra Deemed University, Thanjavur, TN* **Aug 2023**

SKILLS

Data Analysis & Modeling: SQL, Excel, Python, Regression Analysis, Statistical Analysis, Forecasting, Hypothesis Testing
Analytics & Tools: XGBoost, LightGBM, Scikit-learn, Alteryx, Google BigQuery, Design Expert 12.0
Visualization & Reporting: Dashboards, KPI Reporting, Data Visualization, Tableau, Plotly
Business & Operations: Process Improvement, Root Cause Analysis, Decision Support, Stakeholder Communication

PROFESSIONAL EXPERIENCE

Business Analyst, Philanthropy Analytics Project **Aug 2025 - Dec 2025**
Northeastern University | Boston, MA

- Developed planned gift propensity models using XGBoost and LightGBM on 318,000+ donor records, achieving a 37.7% capture rate in the top 1% tier to support prioritization of high value prospects for the University Advancement team
- Engineered behavioral features and interaction terms to address 53.9% missing demographic data, replacing unreliable age variables with giving recency, lifetime giving, and engagement proxies to preserve predictive accuracy
- Segmented constituents into three likelihood tiers (Top 1%, 5%, 10%), reducing outreach volume by 90% while retaining 75% of likely planned gift donors, enabling more focused and efficient cultivation strategies

Graduate Teaching Assistant **Aug 2025 - Dec 2025**
D'Amore-McKim School of Business | Boston, MA

- Supported 190+ graduate and undergraduate students by guiding hands on work in SQL, Python, Excel, Alteryx, and Oracle SQL Developer, strengthening understanding of data wrangling, regression modeling, forecasting, and optimization
- Created and tested SQL scripts, Alteryx workflows, and Excel models for data validation and transformation, enabling end to end analytical workflows covering extraction, cleansing, integration, and aggregation for business cases
- Reviewed 50+ assignments weekly and troubleshoot analytical models during labs and consultations, resolving data quality and logic issues while improving analytical accuracy and consistency in data driven decision making outputs

Operations Analyst Intern **Sep 2023 - Jun 2024**
Mahindra & Mahindra Limited | Pollachi, India

- Planned and executed data driven experiments using Design of Experiments and Response Surface Methodology, evaluating 13 experimental conditions to analyze the impact of key process variables on production quality
- Built and validated regression models and conducted ANOVA on process data, achieving 97.33% R^2 accuracy in forecasting tensile strength and hardness while identifying key drivers of variability
- Optimized process parameters based on statistical findings, contributing to a 30% improvement in material strength while reducing rework and repeat testing costs and improving production consistency

ACADEMIC EXPERIENCE

Spotify User Behavior Analysis, *Northeastern University* **May 2025**

- Analyzed 150K+ streaming records using Python to predict skip behavior, achieving 97% accuracy with SVM models
- Applied K-Means clustering and PCA to segment users into 4 behavioral groups informing personalized content strategies
- Conducted time series forecasting with ARIMA and Prophet, identifying peak listening hours and weekly engagement spikes for ad placement

Ride Fare Prediction & Market Analysis, *Northeastern University* **Apr 2025**

- Engineered data pipelines with BigQuery & PySpark, reducing query latency from 4 min to 12 sec across 690K+ ride records
- Built interactive Flask dashboards with dynamic SQL queries and Plotly visualizations for real time route level price comparison
- Developed Random Forest and XGBoost models achieving Mean Absolute Error of \$6.69 for mid range fare predictions

U.S. Airfare Trend Analytics, *Northeastern University* **Dec 2024**

- Analyzed 3,000+ domestic airfare records (2018–2024) to assess pricing trends, regional disparities, and post-pandemic recovery patterns
- Designed Tableau dashboards highlighting 15–25% inflation adjusted fare increases and cost differences across airport sizes
- Delivered insights supporting pricing strategy, regional capacity planning, and seasonality based decision making