

SUMESH CHAKKARAVARTHI PURUSHOTHAMAN

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in sumesh-chakkavarthi-purushothaman | Sumesh-Chakkavarthi

EDUCATION

Northeastern University

M.S. in Analytics (Applied Machine Intelligence) | GPA: 3.81

Boston, MA

Sep 2024 - May 2026

- Relevant Coursework: Predictive Analytics, Data Mining, Enterprise Analytics, Data Visualization, AI Applications

Sri Sairam Engineering College

B.Tech in AI and Data Science | GPA: 3.31

Chennai, India

Jun 2020 - May 2024

- Relevant Coursework: Machine Learning, Deep Learning, Database Management Systems, Probability & Statistical Modeling

WORK EXPERIENCE

Power of Patients

Intern, XN Project

Boston, MA

Apr 2025 - Jul 2025

- Analyzed multi-year clinical and NOAA weather datasets to identify environmental correlations with Sickle Cell Disease pain crises, engineering 7-day rolling features (temperature, humidity, air pressure) synchronized by ZIP code and date using Python, Pandas, and NOAA API supporting strategic patient outreach planning and risk assessment.
- Built predictive classification models using Random Forest and Logistic Regression with Scikit-Learn, leveraging SHAP values for feature importance interpretation and conducting rigorous p-value analysis for statistical validation, implementing temperature binning and correlation heatmaps to capture non-linear environmental trigger patterns.
- Delivered reproducible analytical insights through Jupyter notebooks translating complex statistical findings into actionable healthcare recommendations, maintaining strict NDA compliance while aligning findings with patient geography and seasonal trends.

Cisco AICTE

Data Analyst Intern

Chennai, India

Jul 2022 - Sep 2022

- Optimized enterprise data workflows by debugging and refactoring Excel formulas and SQL queries achieving 20% efficiency improvement, while reducing cross-functional application errors by 15% through Python automation and predictive analytics techniques.
- Automated critical data processing pipelines using Python and clustering algorithms reducing manual preprocessing effort by 30%, while streamlining KPI tracking and performance monitoring through Tableau dashboards delivering actionable insights via Power BI presentations in Agile sprint cycles.

PROJECTS

Strategic Partner & Vendor Engagement Dashboard

Jan 2026 - Mar 2026

Python, SQL, Tableau, Power BI, PostgreSQL

- Engineered centralized PostgreSQL database migrating 5,000+ vendor records from spreadsheets indexed by service codes eliminating duplicate lookups, enabling unified cross-departmental access and real-time business development decision-making.
- Developed interactive Tableau/Power BI dashboard transforming contact lists into lead-tracking funnel with automated pipeline metrics reducing manual reporting by 40%, designed geographic heat maps across Healthcare, Tech, Finance sectors identifying 200+ target accounts.

Time Series Forecasting of Prescription Demand

Jan 2025 - Mar 2025

Python, ARIMA, Exponential Smoothing, Statsmodels, Tableau

- Forecasted Medicare demand using ARIMA and Exponential Smoothing on 2018-2022 data achieving MAPE under 8%, performing decomposition analysis to identify seasonal patterns and policy-driven demand shifts for strategic healthcare planning.
- Designed Tableau dashboards with seasonal indicators and pricing alerts automating trend detection enabling inventory optimization reducing stockout incidents by 25%.

Traffic Stop Disparity Analysis

Nov 2024 - Dec 2024

R, ggplot2, Statistical Testing, Regression, Hypothesis Testing

- Analyzed 500,000+ traffic stops using t-tests, correlation analysis, and linear regression in R revealing drivers aged 20-40 faced 35% higher citation rates, created ggplot2 visualizations delivering policy recommendations for equitable enforcement.

Online Payment Fraud Detection

Sep 2024 - Nov 2024

Python, Pandas, Scikit-Learn, GridSearchCV, Tableau

- Developed ML fraud detection achieving 92% accuracy using Random Forest with feature engineering on transaction patterns, applying GridSearchCV hyperparameter tuning reducing overfitting by 15%, built Tableau dashboards translating results into business insights.

SKILLS

Programming: Python, SQL, R, Java, Bash | **Data Analysis:** Pandas, NumPy, Excel, Statistical Modeling, A/B Testing, EDA

Machine Learning: Scikit-Learn, Random Forest, ARIMA, Regression, SHAP, GridSearchCV | **Visualization:** Tableau, Power BI, ggplot2

Databases: PostgreSQL, MySQL, Redshift | **Tools:** Git, Jupyter, RStudio, AWS (EC2, S3), Docker, Jira