

# JESSE COGGINS

Data Analyst · Data Scientist · SQL · Python · Machine Learning · Tableau

*M.S. Data Analytics – Data Science*

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## PROFESSIONAL SUMMARY

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Data Analyst and Data Scientist candidate with an M.S. in Data Analytics – Data Science and nearly a decade of multi-site operations leadership turning KPI, revenue, labor, and throughput data into decisions. Portfolio spans SQL and Tableau dashboard development, classical machine learning, deep learning, statistical hypothesis testing, time-series forecasting, and production ML pipelines built with MLflow, DVC, Docker, FastAPI, and CI/CD. Targeting remote analytics and data science roles where operations-grounded business judgment, rigorous modeling, and clear communication drive measurable impact.

## TECHNICAL SKILLS

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**Languages & Databases:** SQL, Python · PostgreSQL, MongoDB

**Analytics & BI:** Tableau, Excel, Pandas, NumPy, Matplotlib, Seaborn · Data Analysis, Exploratory Data Analysis (EDA), Data Visualization, Dashboard Development, KPI Reporting, Business Intelligence

**Statistical & Machine Learning:** Scikit-learn, Statsmodels, SciPy · Random Forest, Logistic Regression, K-Means, PCA, ARIMA · Hypothesis Testing, Classification, Regression, Clustering, Time-Series Forecasting, Predictive Modeling, Cross-Validation, Feature Engineering

**Deep Learning & NLP:** TensorFlow, Keras · Convolutional Neural Networks (CNN), Bidirectional LSTM (Bi-LSTM) · Computer Vision, Sentiment Analysis, Text Classification

**Data Engineering & MLOps:** ETL, Data Wrangling, Data Cleaning, Git/GitHub, Docker, FastAPI, MLflow, DVC, GitLab CI/CD · Experiment Tracking, Data Versioning, Model Deployment, REST APIs

**Business:** KPI Analysis, Business Analysis, Stakeholder Reporting, Process Improvement, Cross-functional Communication

## PROJECTS

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### Customer Churn Analytics Dashboard | *Tableau, EDA*

- Designed an interactive Tableau dashboard on a telecom churn dataset, surfacing retention risk signals across contract type, income, geography, and payment method.
- Published the dashboard as a Tableau Public portfolio artifact with stakeholder-ready visualizations that translate churn patterns into actionable retention insights.

### Loan Default Risk Classifier | *Python, Scikit-learn, Random Forest, Stratified K-Fold CV, ROC-AUC*

- Built a binary classification pipeline on 148,670 loan records — data wrangling, feature engineering, class-imbalance handling via balanced class weighting, and stratified k-fold cross-validation — achieving 84.7% accuracy and 73.7% ROC-AUC.
- Analyzed precision-recall tradeoffs and framed confusion matrix outputs as a business risk decision framework in a formal analytical report written for non-technical stakeholders.

### Hospital Readmission Analysis — Supervised & Unsupervised ML | *Python, Scikit-learn, Random Forest, K-Means, PCA*

- Applied three techniques in a single end-to-end study: Random Forest for supervised readmission classification, K-Means for unsupervised patient risk segmentation, and PCA for dimensionality reduction and cluster visualization.
- Evaluated model performance with confusion matrix and ROC analysis, interpreted cluster separability in PCA-reduced space, and translated segmentation outputs into healthcare-relevant patient risk profiles.

### Relational & Non-Relational Database Design | *PostgreSQL, MongoDB, SQL, ETL*

- Designed and implemented a normalized 3NF PostgreSQL database across 5 tables and 100,000 records — including staging table ETL, query optimization via indexes and CTEs, and reusable Views for analytical reporting.
- Built a parallel MongoDB implementation with aggregation pipelines and compound index optimization, demonstrating proficiency across relational and document-oriented paradigms.

## Statistical Analysis & Market Basket Analysis | Python, SciPy, Statsmodels, Mlxtend, Apriori

- Conducted hypothesis testing on health insurance data using Pearson correlation, one-way ANOVA, Mann-Whitney U, and Chi-Square / Cramér's V to identify statistically significant drivers of insurance charges.
- Applied the Apriori algorithm to 8,234 retail transactions, surfacing high-lift product association rules (lift = 88.2) to inform cross-promotion strategy.

## Time-Series Revenue Forecasting | Python, Statsmodels, ARIMA

- Built and evaluated an ARIMA forecasting model on 731 observations of daily revenue data, applying stationarity testing, parameter selection, and holdout forecast evaluation.
- Reported forecast performance (RMSE 0.4887; MAE 0.3766) and documented model assumptions and limitations in a formal analytical report.

## Deep Learning — Computer Vision & NLP | Python, TensorFlow, Keras, CNN, Bi-LSTM

- Built a multi-class Convolutional Neural Network for plant seedling image classification and a Bidirectional LSTM for text sentiment analysis — implementing, training, and evaluating deep learning architectures across both computer vision and NLP domains.
- Analyzed training dynamics via loss and accuracy curves to diagnose underfitting and overfitting, evaluated generalization on held-out test sets, and documented architectural decisions in a formal project report.

## End-to-End ML Pipeline — Flight Delay Prediction | Python, FastAPI, Docker, MLflow, DVC, GitLab CI/CD

- Implemented a Dockerized FastAPI prediction API with DVC data versioning and MLflow experiment tracking, organized as a reproducible end-to-end ML pipeline.
- Configured GitLab CI with automated build and test stages, demonstrating MLOps practices across data versioning, experiment tracking, containerization, and continuous integration.

## PROFESSIONAL EXPERIENCE

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### General Manager · Xtreme Car Wash · Anniston, AL Jan 2022 – Feb 2026

- Tracked and analyzed daily KPIs — revenue, labor cost %, and customer throughput — across 3 sites, using real-time performance data to drive staffing decisions and reduce operational inefficiencies.
- Designed and delivered structured weekly and monthly business intelligence reports for ownership, translating site-level data into financial and operational insights that informed executive decisions.
- Applied performance trend analysis to manage and coach 20+ employees across multiple locations, identifying execution gaps and improving accountability through data-driven feedback.

### Site Manager · Xtreme Car Wash · Anniston, AL Mar 2020 – Jan 2022

- Monitored wash volume, labor utilization, and throughput metrics daily; used demand-pattern analysis to optimize scheduling and maintain operational targets.

### Site Manager · International Car Wash Group · Gadsden, AL Oct 2017 – Mar 2020

- Managed daily operations and staff performance at a high-volume site, sustaining service quality and operational KPIs through consistent process execution.

## EDUCATION

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### M.S. Data Analytics – Data Science · Western Governors University Mar 2026

Coursework: SQL, Database Management, Machine Learning, Deep Learning, Statistical Analysis, Data Mining, MLOps, Optimization, Data Wrangling

### B.S. Management · Jacksonville State University May 2024

Summa Cum Laude · Special Honors in Management

### A.S. General Studies – Business Administration · Gadsden State Community College Aug 2022

## CERTIFICATIONS

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- WGU Specialization: Data Science Professional · Jan 2026
- WGU Certificate: Data Analytics Professional · Jul 2025
- WGU Certificate: Data Operations · Sep 2025
- CompTIA A+