

Jaylen Callahan

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SUMMARY

Data Science Architect with 10+ years delivering enterprise AI and machine learning solutions, including large-scale deployments and more than eight years advising clients, executives, and delivery teams. Builds secure Databricks platforms and maintainable ML pipelines across data analysis, feature engineering, model training, deployment, and MLOps. Brings hands-on depth in Python, SQL, forecasting, **anomaly detection**, **recommendation systems**, computer vision, risk modeling, **mathematical optimization**, revenue management, price modeling, and causal inference. Leads technical scoping, feasibility reviews, **Statements of Work**, pricing, prototypes, and production delivery. Enjoys helping teams make sound decisions, adopt practical AI workflows, and sustain results through workshops, writing, and clear executive communication.

EXPERIENCE

Principal Data Science Architect

September 2023 - Present

Pinnacle Meridian Group

Chicago, Illinois

Leads consulting strategy across retail, manufacturing, and energy engagements. Directs Data Scientists, Data Engineers, and ML Engineers through architecture, presales, delivery, governance, and client enablement. Connects platform choices with revenue, margin, service, cost, and adoption outcomes.

- Set AI strategy across seven client engagements, linking Databricks roadmaps with revenue, margin, service, and cost goals.
- Built governed lakehouse pipelines with **Unity Catalog**, **Delta Tables**, and MLflow for forecasting and recommendations.
- Directed Data Scientists, Data Engineers, and ML Engineers through validation, deployment, monitoring, and operational handoff.
- Shaped Statements of Work, feasibility reviews, pricing options, and pitches for complex client proposals.
- Established code reviews, experiment tracking, and release controls that improved repeatability across **Python** and **SQL** solutions.
- Led executive workshops on **causal inference**, **price modeling**, LLM adoption, and operational risk for C-suite sponsors.

Senior Data Science Consultant

January 2021 - August 2023

Harborline Data Partners

Atlanta, Georgia

Delivered **client-facing revenue management** and AI programs for multi-region retail organizations. Combined causal inference, forecasting, optimization, Databricks engineering, LLM prototyping, presales, and enablement sessions into practical operating solutions.

- Delivered retail price optimization using causal inference, demand **forecasting**, and **mathematical optimization** for weekly decisions.
- Built Databricks pipelines with Delta Tables, MLflow, and Unity Catalog controls across transaction and inventory data.
- Created anomaly detection and recommendation services with Python and SQL, supported by backtesting and calibration reviews.
- Prototyped document classification and analyst question-answering workflows with **Hugging Face**, LangChain, and commercial **LLM APIs**.
- Presented solution economics, delivery risks, scope, and pricing assumptions to finance, procurement, and executive audiences.
- Facilitated client workshops covering runbooks, feature definitions, monitoring thresholds, and operational ownership practices.

Data Science Lead

June 2018 - December 2020

Cedar Peak Consulting

Denver, Colorado

Led predictive analytics workstreams for manufacturing and utilities clients. Guided a four-person delivery team through discovery, experimentation, architecture, validation, technical pitches, production readiness, and stakeholder adoption.

- Translated equipment, demand, and service questions into deployable forecasting and **anomaly detection** products.
- Implemented Python, SQL, and **Databricks** pipelines with **feature engineering**, scheduled scoring, and analyst review workflows.
- Guided four-person teams through experiment design, peer review, model cards, and production readiness checks.
- Built **computer vision** proof of concept with labeled images, model evaluation, and plant-floor acceptance testing.
- Estimated cloud dependencies, integration effort, staffing, and delivery phases for client **proposals** and technical pitches.
- Published practical notes on model drift, causal inference, and responsible experimentation for **client-facing** consultants.

Data Scientist

January 2016 - May 2018

Blue Ridge Analytics

Raleigh, North Carolina

Developed predictive analytics for consumer and media clients, connecting behavioral data with planning decisions. Supported dataset preparation, model evaluation, Databricks migration, anomaly alerting, client communication, and implementation handoffs.

- Developed demand forecasting and recommendation models with **Python**, SQL, and reproducible notebooks for client planning.
- Prepared sales, digital activity, and service datasets, resolving quality issues and documenting feature lineage.
- Evaluated model candidates through cross-validation, backtesting, and error segmentation for sponsor review.
- Created **anomaly detection** service with calibrated thresholds, alert guidance, and an engineering handoff package.
- Converted batch transformations into **Delta Tables** during Databricks migration, recording experiments in **MLflow**.
- Presented model limitations and practical use cases during client working sessions and implementation reviews.

PROJECTS

Retail Revenue Optimization Lab 📅 2024

Connected causal inference, demand forecasting, price modeling, and mathematical optimization into a reusable decision workflow for commercial planning teams.

Enterprise LLM Analyst Assistant 📅 2023

Combined Hugging Face, LangChain, DSPy, and commercial LLM APIs within a governed prototype for document research and analyst questions.

Computer Vision Quality Pilot 📅 2020

Created an image-based inspection prototype with evaluation checkpoints, operational acceptance criteria, and a practical handoff plan for plant teams.

LEADERSHIP & AWARDS

- Databricks Lakehouse Innovation Award, 2025
- Applied Analytics Excellence Award, Harborline Data Partners, 2022
- Graduate Research Fellowship, North Carolina State University, 2014

EDUCATION

Master's Degree in Applied Statistics

2015

North Carolina State University GPA: 4.0

Raleigh, North Carolina

Coursework: Statistical Modeling, Causal Inference, Machine Learning, Experimental Design

Bachelor's Degree in Economics

2013

University of Georgia GPA: 3.8

Athens, Georgia

Coursework: Econometrics, Optimization, Revenue Management, Quantitative Analysis

CERTIFICATIONS

- Databricks Certified Machine Learning Professional 📅 2024
- AWS Certified Machine Learning - Specialty 📅 2023
- Databricks Certified Data Engineer Professional 📅 2022

TECHNICAL SKILLS

- **Programming and Querying:** Python, SQL, Jupyter, pandas
- **Databricks Platform:** Databricks, Unity Catalog, Delta Tables
- **MLOps and Lifecycle:** MLflow, model monitoring, model registry
- **LLM Tooling:** Hugging Face, LangChain, DSPy
- **Cloud Platforms:** AWS, Azure, GCP
- **Predictive Modeling:** Forecasting, anomaly detection, recommendation systems
- **Advanced Analytics:** Computer vision, risk modeling, causal inference
- **Optimization and Pricing:** Mathematical optimization, revenue management, price modeling
- **Data Engineering:** Feature engineering, ETL, batch pipelines
- **Validation Methods:** Cross-validation, backtesting, holdout analysis
- **Delivery Methods:** Rapid prototyping, proofs of concept, technical presales
- **Client Deliverables:** Statements of Work, feasibility assessments, pricing models

SKILLS

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|-----------------|----------------|---------------------|--------------------------|
| • Python | • MLflow | • LangChain | • Recommendation Systems |
| • SQL | • Delta Tables | • DSPy | • Computer Vision |
| • Databricks | • MLOps | • Forecasting | • Causal Inference |
| • Unity Catalog | • Hugging Face | • Anomaly Detection | |

PROFESSIONAL AFFILIATIONS

- Conference Speaker, Data Platforms and AI Forum, 2025
- Contributor, Internal Responsible AI Practice, 2021 - Present

- Mentor, Analytics Community of Practice, 2019 - 2023

LANGUAGES

- English (Native)
- Spanish (Intermediate)

ADDITIONAL INFORMATION

Work Status : Authorized to work in United States. No sponsorship required.

REFERENCES

AVAILABLE ON REQUEST