



NICHOLAS J. NORTON

MBA, MSDA — Data Scientist · Architecting Enterprise AI at Scale

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PROFESSIONAL SUMMARY

Strategic Data Scientist with 7+ years of experience bridging complex business logic with high-performance machine learning and AI systems across Distribution, Banking, and Education sectors. Expert in cloud-native AI orchestration on Google Cloud Platform — Vertex AI, Gemini, BigQuery, and MLOps — with a proven track record of transforming legacy manual processes into automated, production-grade AI pipelines. Recently led a digital transformation that achieved **99.52% runtime reduction** (21 hours → 5 minutes) while managing 100+ production models spanning 200K+ SKUs. Passionate about architecting systems where data quality, AI governance, and business impact converge.

CORE COMPETENCIES

Generative AI	Gemini 1.5 Pro, Vertex AI Pipelines, OpenAI Whisper, ElevenLabs, Multimodal Pipeline Engineering, Prompt Engineering
ML & Forecasting	ARIMA, XGBoost, Prophet, BQML, Propensity Modeling, Demand Forecasting, Champion-Challenger AI Validation
Cloud & MLOps	Google Cloud Platform, Vertex AI, Cloud Functions, Gemini, Dataform (SQLX), Snowflake, Domo
Languages & Analytics	Python, SQL (BigQuery Standard SQL), R
Data Engineering	ETL/ELT Orchestration, Data Warehousing, Automated Quality Gates, CI/CD for Data
Certifications	Google Data Analytics Professional · Google Cloud Generative AI Leader

EXPERIENCE

O'Reilly Auto Parts — Springfield, MO Sep 2022 – Present

Data Scientist · AI-Powered ML Pipelines & Demand Forecasting

- **Champion-Challenger AI Validation:** Implemented automated **MAPE-based validation gates** within Vertex AI pipelines — only models demonstrating superior predictive accuracy over incumbent Champion models are promoted to production, ensuring continuous AI improvement at scale.
- **Vertex AI at Scale:** Architected multi-model Vertex AI pipelines automating assortment selection and transaction propensity modeling for **200K+ SKUs** across hundreds of retail and distribution locations.
- **Hybrid AI Forecasting Framework:** Designed production-grade ML models combining **ARIMA time-series** with **XGBoost transaction propensity** to optimize inventory depth and product availability, directly impacting millions in potential revenue and inventory savings.
- **99.52% Runtime Reduction:** Migrated legacy Excel-based forecasting logic to cloud-native Python and BigQuery, collapsing a **21-hour manual process to 5 minutes** — enabling near-real-time inventory decisions powered by AI.

O'Reilly Auto Parts — Springfield, MO Sep 2021 – Sep 2022

Data Analyst · Operational Reporting & SQL Automation

- Developed SQL-driven reporting suites and automated dashboards delivering **executive-level visibility** into warehouse operations, reducing manual data extraction overhead by over 80%.
- Established repeatable data quality frameworks that standardized metric definitions across cross-functional teams.

EARLIER CAREER

2U — Denver, CO

Senior Admissions Counselor · Feb 2018 – Jan 2019

- Performed competitive analysis using **Salesforce and Tableau** to develop data-driven counseling strategies and identify high-potential candidates from webinar engagement data.
- Created and executed new hire training and process improvement guidelines, including an original professional development curriculum covering resume writing, networking, and interviewing skills.

Admissions Counselor, American University · Jul 2016 – Feb 2018

- Managed a prospect pipeline of thousands of graduate candidates via telephone, video, and email; developed recruitment reports and analyzed enrollment data to inform outreach strategy.

SELECT PROJECTS

Multimodal Narrative Intelligence Pipeline

Python · Whisper · Gemini 1.5 Pro · ElevenLabs

- Engineered a **custom audio-to-narrative AI pipeline** processing multi-channel Discord audio via OpenAI Whisper, implementing speaker diarization and identification to convert raw streams into structured, speaker-labelled transcripts.
- Leveraged **Gemini 1.5 Pro's 1M-token context window** with advanced prompt engineering to synthesize consistent narrative recaps from session-length transcripts.
- Integrated **ElevenLabs voice cloning** to automate production of high-fidelity audio recaps, delivering a branded, familiar narrative experience — a full-stack demonstration of multimodal GenAI in production.

Warehouse Assortment Optimization Pipeline

GCP · Vertex AI · BQML · Dataform

- Integrated **automated AI quality gates** (MAPE thresholds) within Vertex AI pipelines, ensuring only validated, production-ready models reach deployment — a fully governed AI lifecycle from training to promotion.
- Deployed **BQML XGBoost models** for transaction propensity scoring and **ARIMA models** for inventory depth optimization — all within BigQuery to minimize data egress and latency.
- Architected an end-to-end pipeline managing the full lifecycle of 100+ demand and propensity models, from automated retraining through champion-challenger evaluation to output curation.

EDUCATION

MS, Data Science & Analytics	University of Missouri	May 2022
MBA	American University — Kogod School of Business	May 2020
BA, American Government & Politics	Drury University	May 2012

ADDITIONAL

Certifications: [Google Data Analytics Professional](#) · [Google Cloud Generative AI Leader](#)

Domains: Retail Supply Chain · Banking · Education · Generative AI

Interests: Cloud Architecture · MLOps Governance · Multimodal AI · Audio Engineering