

Ayşe Demir Davidson

Data Science Lead | Experimentation, Applied AI & ML

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10+ years building ML-driven and advanced analytics decision systems for high-stakes operational outcomes at scale. Specialized in causal inference, data visualizations and applied machine learning.

Technical Stack: Experimentation & Causal Inference (SQL, Python, PySpark) · ML Systems (Databricks, AWS AI/ML, Azure) · Agentic Workflows (AWS Bedrock, Microsoft Logic Apps) · Data Visualization (Dash, Tableau)

PROFESSIONAL EXPERIENCE

Freelance & Independent Research; Remote

2024 - 2025

- Transitioned to independent work during a remote work period; built the transition into a focused upskilling sprint; began research in AI interpretability & evaluation, developing causal intervention methods for identifying internal failure and safety dynamics in LLMs.

AMAZON WEB SERVICES, Sr Lead (L6), Global Sales Operations, Data Science & Analytics

2022 - 2024

- Owned revenue-critical ML and analytics products as technical lead; led cross-functional data science pods to deliver automated intelligence systems for user-facing operational teams across sales, finance, customer success, and GTM at scale.
- Architected a multi-model revenue bridge decomposing a >\$80B annual surface into causal drivers and incremental growth—translating targets into comp-safe, realized attribution that governed how the organization invested, prioritized, and compensated. Powered a RAG-enabled executive platform in the SVP and C-suite reporting line.
- Led AWS's shift to industry-based global customer segmentation, redesigning the end-to-end pipeline and cutting run time from 5 hours to 20 minutes; built an ML-based, agentic go-to-market prioritization system to govern sales acceleration variance and risk management.
- Led measurement infrastructure and telemetry for a new customer success product (Databook), designing a quasi-experimental (difference-in-differences) framework that drove ~\$10M in savings.
- Mentored and coached ICs; built trainings and set analytics standards across the data science team.

GAP INC., Lead, Decision Science & Advanced Analytics

2018 - 2022

- Built causal experimentation frameworks and predictive systems (hypothesis testing, classification, propensity scoring, time series, anomaly detection), driving ~\$40M in cost and efficiency gains across cross-functional teams and portfolio brands (Banana Republic, Old Navy, Athleta, GAP).
- Owned the digital media measurement and optimization stack across paid channels; defined spend efficiency and ROAS frameworks. Built proxy causal models to estimate incremental revenue impact for digital channels.
- Designed and ran lifecycle and retention experiments (LTV, churn, frequency), generating ~\$2M in savings.
- Scaled an ML-driven geospatial platform (CARTO) end-to-end, from vendor sourcing through deployment.
- Shipped ML-driven dashboards and APIs embedded directly in operational workflows, enabling teams to act on critical time-series model outputs in real time.

OLD NAVY E-COMMERCE, Associate Data Scientist

2016 - 2018

- Built and owned experimentation and statistical framework for an e-commerce platform; led A/B testing and causal analyses across product surfaces, improving retention, conversion and monetization.
- Established cross-brand experimentation and performance frameworks, driving ~\$90M in test programs across mobile, web, and navigation surfaces; defined platform strategy and improved ROI across key product decisions at scale.

EARLY CAREER

- **Netpolarity** — Data Analyst (2015–2016) · **BBDO Worldwide** — Marketing Data Intern (2014)
- **Microsoft** — Campus Brand Ambassador (2012–2013)

SPECIALIZED TRAINING

- Stanford Online (ML; Human-Centered GenAI), Amazon ML University, Hugging Face — 2019–2026
 - **Focus:** LLMs & Evals, Responsible AI, bias & fairness, evaluation frameworks, data privacy, security, AI ethics
 - **AWS Certified Agentic AI & LLM Workflows Practitioner**

SELECTED TEACHING & SPEAKING

Course Designer & Instructor (AI, Data Visualization, Python): Gray Area Foundation for the Arts, DDI Akademi, Stanford University, NTU Risk & Resilience Lab — 2020–2024

Invited speaker (Storytelling with Data): Google Art Week (Alphabet Inc.), Salesforce Dreamforce — 2021–2022

EDUCATION

- MS, Computational Design — International Technological University, 2017
- BS, Management, Managerial Information Systems — Binghamton University, 2015 (Dual Diploma)
- BS, Business Administration — Middle East Technical University, 2015