

Zachariah Farahany

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EDUCATION

The University of Chicago | Chicago, IL | MS Applied Data Science

Graduated *Summa Cum Laude*: December 2024

Relevant Coursework: Big Data Platforms, Data Engineering, Advanced Machine Learning

Marquette University | Milwaukee, WI | BS Computer Science and Math (COMA & DS)

Study Abroad: City University, London

Graduated *Magna Cum Laude*: May 2023

PROFESSIONAL EXPERIENCE

Wells Fargo, Charlotte, NC

Quantitative Analytics Program Analyst - MRM – WIM Validation

Jan. 2026 - Present

- Architected a backtesting engine from scratch validating four factor models, including a novel Dirichlet-distribution portfolio construction method to simulate Wells Fargo's client portfolio distribution
- Replicated a 2025 SOTA volatility model (MF2-GARCH) from its research paper alone, matching published accuracy (7% RMSE); found EWMA half-life tuning, not model sophistication, drove tracking-error performance

Quantitative Analytics Program Analyst - RMG Decisioning – Auto

Jun. 2025 – Dec. 2025

- Built an automated credit bureau attribute auditing tool expanding validation coverage from <1% to 25%+ of applicants, reducing a multi-week manual process for 10 analysts to a single script running in under 10 minutes
- Validated a charge-off probability model driving approval decisions across Wells Fargo's ~\$43B auto loan portfolio, enforcing monotonicity against key risk variables and justifying segment-level prediction error

Seyon Solutions, Chicago, IL

Jan. 2025 – May 2025

AI Engineer (Contract)

- Architected a multi-tool LlamaIndex agent from scratch enabling plant managers to query 650+ employee operations in natural language, achieving ~90% query accuracy at deployment across a terabyte-scale event store
- Designed and implemented a bronze-silver-gold medallion pipeline on AWS Lambda + Delta Lake processing scan events in under 5 seconds, with AWS Glue aggregating silver into three production tables

Chartwell Insurance Services, Chicago, IL

Aug. 2024 – Jan. 2025

AI Solutions Consultant (Contract)

- Architected a modular production RAG system on GPT-4 + Pinecone, separating retrieval, orchestration, and ingestion into discrete components, with live document upload keeping the knowledge base current
- Developed a hyperparameter tuning harness evaluating chunk size, overlap, top-k retrieval, and prompts against a 100-question eval set; best config hit ~80% accuracy with top retrieval and generation scores

Badger Meter Inc., Milwaukee, WI

Jun. 2023 – Jun. 2024

Data Scientist – Engineer I

- Built an AWS EMR and Spark ETL pipeline aggregating 5TB of device telemetry from DynamoDB, cutting processing bottlenecks by 50% through multithreading and parallel computing
- Engineered a gradient boosting classifier predicting IoT device failure from voltage telemetry, achieving ~60% F1 on a highly imbalanced dataset; became the basis for a proposed paid SaaS API endpoint
- Sole quantitative source of truth for device fleet health across 1,000+ IoT devices, delivering monthly diagnostics presentations to senior leadership

PUBLICATIONS

First author. Farahany, Z. et al. (2022). "Oversampling Techniques for Predicting COVID-19 Patient Length of Stay." IEEE International Conference on Big Data. arXiv:2511.15048.

SKILLS & CERTIFICATIONS

Certifications: Google Cloud Platform: Certified Data Leader (August 2024), Certified Data Engineer (December 2025)

Skills: Python (5 Years), SQL (4 Years), AWS (3 Years), Spark, LlamaIndex, RAG/Agentic Systems, Vector Databases (Pinecone, OpenSearch), NLP, TensorFlow, PyTorch, MLFlow, Google Cloud Platform (GCP), Scikit-Learn, Docker