

# Peter Wills, Ph.D.

*Math Ph.D. with experience in agentic systems, full-stack machine learning, software engineering, and statistics.*

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## TECHNICAL LANGUAGE SKILLS & SUBJECT EXPERTISE

Deep understanding of artificial intelligence models, machine learning, statistics, software engineering, predictive modeling, linear algebra, graph algorithms, and distributed computing. Fluent in agentic systems development (LangChain), the Python ML stack, Spark, SQL, git, shell scripting, & emacs config. Experienced in both object-oriented and functional programming paradigms.

## PROFESSIONAL EXPERIENCE

**Senior Data Scientist, EquipmentShare** September 2023 to Present

- ❖ Develop agentic systems that connect with various data resources to provide fleet performance summaries to executives
- ❖ Moved baseline ML & AI capabilities from 0 to 1 with ML infrastructure, foundational models, and eng integration
- ❖ Built generative pipeline to extract, summarize, and cluster technician notes, reducing rate of unparsed notes by 82%

**Senior Machine Learning Engineer, Abnormal Security** April 2022 to April 2023

- ❖ Product owner of internal email attack detection product; managed roadmapping, architecture, and ML strategy
- ❖ Helped shepherd through efficiency improvements that reduced overall message processing costs by 13%
- ❖ Shipped decision rules that reduced the internal-attack false-negative rate (missed-attack rate) by >60%

**Senior Data Scientist, Stitch Fix** May 2019 to March 2022

- ❖ Build & maintain a canonical business forecast engine, which backs multiple inventory optimization systems
- ❖ Develop backtesting frameworks, dashboards, and continuous alerting systems to monitor forecast fidelity
- ❖ Identified low-hanging-fruit improvements to the forecast, resulting in a 60% decrease in (mean absolute) error

**Data Science Engineer, FullContact** (Graph-based identity resolution at scale) June 2018 to May 2019

**Data Scientist, the Trade Desk** (ML-driven real-time ad targeting) Oct. 2017 to May 2018

**Data Scientist, Entelligent** (Quantitative trading & portfolio optimization) Nov. 2016 to Oct. 2017

**Research Assistant, University of Colorado** (Variety of topics, see papers below) May 2014 to May 2018

## EDUCATION

*Doctor of Philosophy, Applied Mathematics* Graduated 2018  
University of Colorado, Boulder, CO

*Bachelor of Science, Physical Sciences* Graduated 2010  
Reed College, Portland, OR

## PUBLICATIONS

- ❖ P. Wills and F. Meyer. *Metrics for Graph Comparison: A Practitioner's Guide*. PLoS ONE 15(2): e0228728
- ❖ P. Wills and F. Meyer. *Detecting Topological Changes in Dynamic Community Networks*. Complex Networks and Their Applications VIII. pp. 211–222.
- ❖ P. Wills, E. Iacocca, and M. Hoefer. *Stochastic Thermal Perturbations of Dissipative Droplet Solitons*, Phys. Rev. B 93 144408
- ❖ P. Wills, E. Knill, K. Coakley, and Y. Zhang. *Performance of Test Supermartingale Confidence Intervals for the Success Probability of Bernoulli Trials*. Journal of Research of National Institute of Standards and Technology 125 125003