# Garth Mortensen

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## Data Science Engineer

Creative data scientist and software engineer, skilled at wiring up end-to-end production systems.

## Featured Project: [SpilloverLab.com](https://www.spilloverlab.com)

A live financial time series analysis platform featuring ARIMA, GARCH, and spillover modeling. It delivers simple-English interpretations, interactive visualizations, [REST](https://api.spilloverlab.com/redoc) and [GraphQL](https://api.spilloverlab.com/v1/graphql/) APIs, and [MCP server integration](https://github.com/garthmortensen/timeseries-api/blob/main/mcp_server.py) for AI agent control. Built with a modular, microservice-based architecture, deployed to the cloud, and fully [documented](https://timeseries-compute.readthedocs.io/en/latest/), [tested](https://app.codecov.io/gh/garthmortensen/timeseries-api), and [quality controlled](https://app.codacy.com/gh/garthmortensen/timeseries-api/dashboard) via CI/CD.

## Professional Experience

### Federal Reserve Bank of Minneapolis

**Sr. Data Scientist, National Stress Testing Program, Production.** *Minneapolis, MN - 06/2022 – Present*

* Maintained multiple predictive models, modeling team’s bespoke orchestration pipelines, dashboards, adhoc analyses for Board of Governors.
* Served as Production econometric team’s informal python lead, and formal liaison to frontend, database, QA, ETL, and sysadmin teams, working hand-in-hand to ensure seamless integration across distributed computing and highly-secure filesystem infrastructure.
* Independently introduced python unit testing, Makefiles, simple-English docs.
* Promoted self-sufficiency by mentoring economists and interns in Python, Linux, and computer science principles.
* Technical lead in migrating Production codebase across OS, language versions, environments, enabling mission-critical reproducibility.
* TODO: Pushed {n=10?} Production model releases.

### University of Minnesota Coding Bootcamp

**Fintech Instructor.** [**Student Review**](https://www.coursereport.com/schools/university-of-minnesota-boot-camps?shared_review=42025#reviews)**.** *Saint Paul, MN - 09/2021 – 04/2023*

* Taught Python programming to working professionals, ranging from sysadmins to finance directors.
* Explored cutting-edge topics such as ML/AI and blockchain/Solidity smart contracts.
* Scored 9/10 across all rating categories (engagement, clarity, knowledge), across 270+ lecture hours.

### Medica

**Sr. Healthcare Analyst** *Minnetonka, MN - 11/2019 – 06/2022*

* Implemented models to predict member health scores.
* Discovered techniques to automate database reconciliation.
* Configured bare-metal Linux server to run automated OCR process to ETL .pdf information into database.
* In zero-sum ACA marketplace, consistently outperformed competition.

### United Health Group R&D

**Developer/Data Scientist, contract.** *Minneapolis, MN - 01/2019 – 11/2019*

* Replicated academic research on internal data to uncover actionable insights presented to the CEO.
* Built end-to-end data pipelines: API ingestion, transformation, validation, and visualization.
* Contributed to the design and development of a next-gen big data platform for health research.

### Munich Reinsurance

**Sr. Data Analyst.** *Minneapolis, MN - 05/2017 – 12/2018*

* Programmatically scanned and transformed unstructured claims data into a structured 7M+ record star-schema database.
* Analyzed the resulting dataset to surface insights, including reports for top diagnoses by cost and prevalence, and ML decision tree to predict claims.
* Built and deployed custom productivity tools with clean, user-friendly UI frontends.

### Decyphed

**Entrepreneurial NLP Dev.** *Paris, France - 05/2015 – 01/2016*

* Programmed text analysis plug-ins/tools specialized in language learning applications.

### Saylor Consulting

**Industry Cost Consultant, contract. Recommendation available.** *San Francisco, CA - 12/2013 – 07/2014*

* Analyzed industry factors influencing construction industry costs (material/labor) and forecast prices.
* Overhauled cost benchmarking using early industry indicators, resulting in algorithmic, reproducible cost setting.
* Delivered data-driven market analysis reports and product presentations to Federal client.

### GE Capital REIM

**Investor Relations.** *Paris, France - 07/2012 – 12/2012*

* Oversaw financial database, competitor and industry developments, financial metrics.
* Interpreted market fundamentals for big-ticket investors seeking to purchase entire real estate fund portfolio.
* All $25+ billion in assets sold off to Blackstone and other financial institutions.

### Xinhua News Agency

**Financial News.** *Beijing, China - 02/2009 – 07/2011*

* Led a 15+ person international team to launch a new economics news show, working 6+ months without PTO to meet a high-stakes deadline.
* Developed a demand-driven airtime allocation algorithm based on API-driven topic popularity; the method was later leaked to CNN International and appeared on their daily broadcast lineup.
* The program successfully sold content to major global news networks including CNN and Nikkei.

### Caijing Magazine

**Economic Research Assistant.** *Beijing, China - 01/2008 – 09/2008*

* Published 15+ print stories, commodity reports, and analyses.
* Administered and redesigned website. Introduced self made podcasts, video stories, user comments, and other Web 2 technologies, doubling online readership.
* Managed the internship program, allocated work based on strengths and interests.

### College, high school jobs

*Minneapolis, Minnesota.* 1/2001 – 12/2007

* College: Owner of brick-and-mortar studio providing website design, SEO and graphic design services.
* High school: Employee of small business providing graphic design, SEO and offsite hosting/storage services.

## Formal Education

### St. Thomas University

St. Paul, USA. 2023

* Double MSc in Software Engineering and Data Science
* Double MSc Certifications in AI and Big Data
* GPA 3.9

### EDHEC Business School

Nice, France. 2012

* MSc Finance

### Hamline University

St. Paul, USA. 2007

* BA Economics

## Skills

**Tech**: Python/R, SQL/NoSQL, database design, Linux, APIs, AWS, CI/CD, containers. Aspiring to build decoupled microservices, APIs (RESTful/GraphQL), fullstack prototyping, 12-factor app solutions.

**Certifications**: MS Software Development, MS Databases, MS IT Networking, MS IT Security, MS HTML/CSS, AWS Cloud Practitioner, Graph SQL, Google Analytics IQ, Excel/VBA, Bloomberg Terminal.

**Languages**: English, French and Mandarin Chinese (diminishing CEFR B2).