

# Alex Spigler

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US & Italian Citizen — Authorized to work in US and EU without sponsorship

## EDUCATION

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### George Washington University

Aug. 2023 – May 2027

Dual Degree: BS in Statistics, BA in Computer Science; Minor in Mathematics

Washington, DC

Overall GPA: 3.83 | Statistics GPA: 3.90

- Statistics Coursework:** Bayesian Statistics, Time Series Analysis, Regression Analysis, Mathematical Statistics I & II, Design of Experiments, Sampling
- Computing Coursework:** Data Structures and Algorithms, Database Systems, Software Engineering, Computer Systems, Discrete Structures I, Statistical Computing Packages
- Mathematics Coursework:** Ordinary Differential Equations, Linear Algebra I, Multivariable Calculus

## PROJECTS

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### Chaotic Attractors: Computational Exploration & Visualization | Python

Jan. 2025 – Jan. 2026

- Built production-ready Python package with 50+ unit tests and CLI for discovering chaotic attractors through stochastic parameter search, implementing 9 dynamical systems (5 classical, 4 custom) with multi-stage statistical filtering across parameter space.
- Optimized computation pipeline using NumPy vectorization to generate 2M+ iteration trajectories, with SciPy's Gaussian KDE revealing fractal structure in chaotic data.
- Engineered publication-quality visualization system using Matplotlib with custom colormaps, automated equation rendering, and multi-format export (PNG, PDF, SVG).

### Structural Break & Time Series Modeling | R

March 2025 – April 2025

- Developed a regression model with ARIMA(1,0,1) errors to detect and quantify the impact of competitor market entry on weekly cereal sales (+278,000 unit spike followed by -3,257 units/week trend decline).
- Implemented diagnostic testing for autocorrelation, heteroscedasticity, and normality using statistical hypothesis tests (Durbin-Watson, Shapiro-Wilk, KPSS, Breusch-Pagan).
- Generated 10-week forecasts with 95% prediction intervals using R; documented full analysis in reproducible R Markdown report.

## TECHNICAL SKILLS

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- Languages:** Python, R, SQL, SAS, Java
- Python Libraries:** NumPy, SciPy, Matplotlib, pandas
- R Packages:** tidyverse, ggplot2, aatsa, lmtest, car, tseries
- Tools & Technologies:** Git, pytest, R Markdown
- Statistical Analysis:** Regression, Time Series, Bayesian Statistics, ANOVA, Hypothesis Testing, Experimental Design, Probability Distributions, Categorical Data, Non-Parametric Tests

## EXPERIENCE

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### Barista

Feb. 2023 – Nov. 2024

Tatte Bakery & Cafe

Washington, DC

- Trained 7 new employees on operational standards and customer service procedures.
- Promoted for reliability and strong work ethic while maintaining dual degree studies.

### Independent Digital Asset Investor

Jan. 2013 – Aug. 2023

Self-Employed

Washington, DC

- Managed a private digital asset portfolio on behalf of five investors, growing it to multi-million-dollar value through research-driven allocation decisions.
- Maintained disciplined risk management through position sizing and periodic rebalancing across a volatile, emerging asset class.
- Transitioned to passive management to pursue dual degree in Statistics and Computer Science.