

Jesse Schmolze

Education

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University of Wisconsin, Madison

B.S. in Economics, Mathematics and Physics

GPA: 3.9/4.00

Relevant Coursework: Stochastic Processes, Brownian Motion and Stochastic Calculus, Data-Driven Stochastic Models and Dynamical Systems, Real Analysis, Introductory Econometrics, Linear Algebra, Machine Learning, Deep Learning, Money and Banking

Awards: Lorraine A. and W. Dwight Stone Scholarship (\$12,000 merit)

Madison, Wisconsin

Graduation December 2027

Work & Leadership Experience

Ogborne Capital Management

Investment Research Intern

San Francisco, California

June 2026 - August 2026

- Built an agentic research pipeline in Python (hand-rolled orchestration, local LLM inference via Ollama, LanceDB retrieval over 2,500 tickers and 10 years of SEC filings) that emits a conviction-ranked shortlist of investment leads, each requiring a grounded source quote and a falsifiable forward test with explicit confirm/deny conditions.
- Built a 7-year revenue projection model for the cloud computing stack, covering hyperscalers and neoclouds (CRWV, Nebius, IREN, WULF), incorporating contracted backlog, GPU depreciation schedules, and capacity buildout to assess potential investment opportunities.
- Modeling FX risk in the fund's foreign equity exposure via Monte Carlo simulation of USD/CHF paths under both geometric Brownian motion and GARCH(1,1) dynamics, comparing constant-volatility and volatility-clustering assumptions and evaluating the 5th-percentile tail of simulated outcomes to inform hedging and risk management practice.

Everlight Solar

Business Value Creation Intern

Brooklyn Center, Minnesota

May 2025 – June 2025

- Generated over \$80,000 in revenue across a six-week internship by converting cold residential leads into scheduled appointments through direct in-person outreach.
- Delivered tailored solar value propositions across 500+ household conversations, developing working fluency in the residential solar product set and the financing structures that drive homeowner decisions.
- Iterated on outreach approach across hundreds of homeowner interactions, identifying which opening framings, objection responses, and product angles converted best in different neighborhood demographics, and refining the personal pitch accordingly.

Badger Solar Racing

Race Strategy Team Lead

Madison, Wisconsin

Apr 2025 – Present

- Built an end-to-end race-strategy stack for the 2026 American Solar Challenge that ingests live telemetry, weather forecasts, and course elevation to produce 5-minute target-speed decisions across an 8-hour race day with the goal of optimizing range relative to energy constraints.
- Trained a neural network approximation of the team's full MATLAB and Simulink vehicle dynamics model. The approximation matches the original simulator at $R^2 \geq 0.95$ on critical state variables and runs roughly 1000× faster, making large-scale strategy search tractable.
- Trained a reinforcement learning agent on the approximation with a custom reward balancing distance gain against energy use, battery health, and control smoothness, then benchmarked the result against a classical constrained-optimization baseline.

Research Experience

Learning Time-Inhomogeneous Markov Dynamics in Financial Time Series

Research Advised by Prof. Alejandra Quintos, Co-Authored with Jan Rovirosa

Madison, Wisconsin

Oct 2025 – May 2026

- Built a neural network model that generates time-varying transition probability matrices for equity returns, recovering structured and interpretable matrices in a setting where traditional empirical estimation fails because 99.9% of transition cells contain fewer than 5 historical observations.
- Identified a strong regime signal in the learned matrices, where their internal dispersion correlates with 21-day realized volatility at $r = -0.62$ across 2,347 trading days. This is evidence that volatile markets compress the range of likely next-day outcomes rather than expanding it.
- Presented at the UW-Madison Undergraduate Research Symposium in April 2026 and the American Statistical Association Midwest Regional Conference in Statistics and Data Science in May 2026.

Inspectable Neural Markov Models for Non-Stationary Time Series

Co-Authored Working Paper with Jan Rovirosa, Multi-Asset Extension of Above

Madison, Wisconsin

Jan 2026 – Present

- Extended our previous framework to a 10-asset US bank panel spanning 24 years and 6,183 trading days per asset, covering the dot-com bust, the global financial crisis, the COVID-19 shock, and the 2022-23 rate-driven stress, to test how the choice of conditioning variable affects model coherence across horizons.
- Showed that conditioning on realized volatility rather than returns yields a 5.6% improvement in internal model consistency and superior out-of-sample fit in 9 of 10 assets, identifying the conditioning variable as a first-order modeling decision rather than a notational one.
- Documented a universal cross-asset pattern across 54 model configurations, where high-volatility regimes compress next-step distributions in every configuration tested and the effect is statistically significant in 42 of 54. Coherent dips are visible across all three NBER recessions in the sample.

Who Captures Trade-Network Growth?

Research Advised by Prof. Simeon Alder and Prof. Carter Braxton

Madison, Wisconsin

Jan 2026 – Present

- Estimated how much of partner countries' GDP growth a given country absorbs through its trade network, allowing this absorption rate to vary with the country's institutional quality on a 111-country panel using the Chernozhukov et al. 2018 Double Machine Learning framework.
- Documented a strong institutional moderating gradient where a one-standard-deviation increase in political stability raises the absorption rate by 0.30, with countries in the bottom stability tertile absorbing essentially none of partner growth and countries in the top tertile absorbing 86% of it.
- Stress-tested the result across six governance measures, four estimation methods, polynomial relaxations of the linear specification, and a temporal placebo, confirming the gradient operates at the trade-transmission horizon and is not a spurious institutional-quality channel.

Skills & Interests

Programming: Python(NumPy, PyTorch, Pandas), Simulink, MATLAB, Stata, Microsoft Office Suite

Interests: Bullet Chess, 19th Century Russian Literature, Minnesota Timberwolves, Conscious Hip-hop, Collecting Jordans