Matt Johnson

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EDUCATION

Duke University, Durham, North Carolina
Ph.D., Statistical Science (Advisor: Prof. Mike West)   2017
Dissertation: *Bayesian Predictive Synthesis: Forecast Calibration and Combination*
Certificate in College Teaching   2017
M.S., Statistical Science   2015

University of Chicago, Chicago, Illinois
M.S., Financial Mathematics   2011

Northwestern University, Evanston, Illinois
B.A., Mathematics and Statistics   2010

INDUSTRY EXPERIENCE

Amazon, Seattle, Washington

Research Scientist III, Topline Forecasting, Supply Chain Optimization Technologies   2025 – present
Proposed and developed Structural VAR models for causal time series estimation with correlated variables. Reconciliation of probabilistic hierarchical forecasts. Lead cross-team working groups for both projects.

Research Scientist II   2020 – 2025
Developed and improved total demand forecasting systems within the Supply Chain Optimization organization. Specific projects include generating daily state space forecasts at scale, model combination, forecasting and inference around specific drivers of demand, and hierarchical forecast reconciliation.

QMS Capital Management, Durham, North Carolina

Quantitative Researcher   2017 – 2020
Developed trading strategies based on Bayesian and machine learning methods. Introduced neural network methods to multiple portfolios. Cut training time of existing machine learning strategies by 70%, with larger gains for larger datasets.

Research Intern   2015 – 2017
Performed statistical analyses for portfolio decisions. Clustered similar signals using unsupervised learning techniques to aid in risk management and portfolio construction.

TransMarket Group, a.k.a. Aardvark Trading, Chicago, Illinois

Futures Trader   2011 – 2013
Head of Australian interest rate trading. Created and implemented a statistical arbitrage model for short term and long term interest rate futures on the Australian Securities Exchange. Gross profit over 1mm AUD in first fiscal year. Managed European and U.S. fixed income desks during Asian business hours.

Trading Intern   2010 – 2011
Traded fixed income securities via algorithmic strategies. Created pricing and risk models in Microsoft Excel.

Northwestern University Institute for Policy Research, Evanston, Illinois

Research Assistant   2009 – 2010
Programmed and performed data simulation in R for meta-analysis research under Professor Larry V. Hedges. Simulated outcomes led to a retooling of theoretical results. Coauthored paper on robust error estimation in meta-analysis.

HONORS AND AWARDS	**Duke University**	
	Laplace Award, JSM Section on Bayesian Statistical Science	2017
	Data Expeditions travel and computing grant	2016
	BEST Award, summer support research grant	2016
	First Year Statistical Science Fellowship	2013
	Northwestern University	
	Graduated with Honors in Statistics	2010
	American Collegiate Rowing Association Academic All-American	2009, 2010
	Student Advisory Board, Statistics Department Representative	2008 – 2010
	J. G. Nolan Scholarship	2009
	Pi Mu Epsilon, national mathematics honor society	2008
	National Merit Scholarship	2006
	Miscellaneous	
	King County Explorer Search and Rescue	2023 – 2024
	Boy Scouts of America Eagle Scout	2006

TEACHING EXPERIENCE	**Assistantships**	
	Time Series and Forecasting, Duke University STA 942	2016
	A project-based course for advanced Ph.D. students focusing on new developments in time series research and applications.	
	Statistical Case Studies, Duke University STA 723	2016
	The first-year Ph.D. project and writing course.	
	Statistical Computation, Duke University STA 663	2016
	A masters level course in Python and computation.	
	Introduction to Statistical Decision Analysis, Duke University STA 340	2013 – 2014
	An undergraduate major course on Bayesian decision theory.	
	Calculus, Northwestern University MATH 220, 224	2008 – 2009
	An undergraduate math course on single-variable differential and integral calculus.	
	Tutoring	
	N'CAT Tutor Program, Northwestern University Athletic Department	2010
	Tutored varsity athletes in mathematics and statistics classes, ranging from introductory statistics to year-long mathematics major sequences.	
	Private Tutor	2005 – 2017
	Work individually with students in classes ranging from high school trigonometry to graduate-level statistics.	

SKILLS	Python, MATLAB, R, VBA, familiarity with C/C++/C#, Bloomberg Terminal, LaTeX.

RESEARCH INTERESTS	Bayesian statistics, time series, dynamic modeling, forecasting, forecaster calibration, forecast combination, portfolio decisions, finance.

PAPERS	**Johnson, M. C.** and West, M (2025). Bayesian predictive synthesis with outcome-dependent pools. *Statist. Sci. 40 (1) 109 - 127.* https://doi.org/10.1214/24-STS954
	Hedges, L.V., Tipton, E., & **Johnson, M.** (2010). Robust variance estimation for meta-regression with dependent effect size estimators. *Journal of Research Synthesis Methods, 1, 39-65.*

Internal Presentations	Economics Summit, *FASTLANE: Factor-Augmented Speed for TopLine, And New Elasticities*, Seattle, Washington, mm 2025 (poster)
	Consumer Science Summit, *FASTLANE: Factor-Augmented Speed for TopLine, And New Elasticities*, San Diego, California, June 2025 (poster)
	Consumer Science Summit, *Convex Forecast Reconciliation*, Suncadia, Washington, June 2024 (poster)
	Amazon Machine Learning Conference, *Sumas: State-Space Forecasting at Scale*, October 2021 (lightning talk)
	Consumer Science Summit, *Sumas: State-Space Forecasting at Scale*, August 2021 (lightning talk)
External Presentations	NBER-NSF Seminar on Bayesian Inference in Econometrics and Statistics, *Bayesian Forecasting with Imbalanced Panels: Ensemble Predictions with Forecast Surveys*, Philadelphia, Pennsylvania, May 2025 (talk)
	ISBA 2022 World Meeting, *Bayesian Updating Rules for Entry and Exit of Forecasters*, Montreal, Canada, June 2022 (poster)
	Temple University Applied Statistics and Data Science Course, *Career talk*, Philadelphia, Pennsylvania, November 2019 (guest lecture)
	NBER-NSF Time Series Conference, *Bayesian Predictive Synthesis: Forecaster Calibration and Combination*, Evanston, Illinois, September 2017 (poster)
	Joint Statistical Meeting, *Bayesian Predictive Synthesis: Forecast Calibration and Combination*, Baltimore, Maryland, August 2017 (talk, poster)
	NBER-NSF Seminar on Bayesian Inference in Econometrics and Statistics, St. Louis, Missouri, May 2017 (talk)
	ISBA 2016 World Meeting, *Bayesian Predictive Synthesis and Generalized Density Forecast Combination*, Sardinia, Italy, June 2016 (poster)