

Education

MASTER OF SCIENCE Data Science Central Connecticut State University	2025
MASTER OF SCIENCE Quantitative Economics University of Connecticut	2020
BACHELOR OF ARTS Economics University of Connecticut	2019

Skills

Technical: SQL, Python, R, AWS (S3, Lambda, SageMaker, Athena, Glue, Bedrock, QuickSight), AutoGluon, PowerBI, Tableau, Excel
Statistical: Causal Inference, Experimentation Design (A/B Testing), Regression Analysis, Probability Theory, Hypothesis Testing, Panel Data, Bayesian Hierarchical Modeling, Machine Learning (Supervised/Unsupervised): Deep Learning, Prediction, Classification, Clustering, Regularization, Dimensionality Reduction, Feature Selection, Ensemble Methods, Decision Trees, Association Rules
Field: Agentic AI, Gen AI, LLM, AutoML, NLP, Big Data, Econometrics, Data Analysis & Visualization, Data-driven Decision Making

Experience

Economist Apprentice | Amazon | Seattle, WA | Jun 2024 – present

- Developed Surrogate Index Models to translate LLM updates into forecasts of long-term business impact
- Reduced the standard error of a production model by 6% using bias-injected simulations
- Engineered scalable data pipelines using Cradle, Athena, and Glue to support model inference and real-time decision-making
- Automated monthly model runs using AWS Lambda and SageMaker endpoints
- Conducted A/B testing to identify treatment effects, accounting for multiple testing and covariate imbalance
- Leveraged SQL for data extraction, transformation, and loading to generate science models
- Designed and automated monthly indices using 30 PO metrics, with reporting in QuickSight
- Applied advanced statistical techniques in Python to construct causal models for observational and experimental data

Research Assistant & Teaching Assistant | University of Connecticut | Storrs, CT | Dec 2019 – present

- Managed end-to-end data collection, processing, analysis, and reporting for research studies
- Utilized various quasi-experimental designs (difference-in-differences, event study, IPTW, IV) to identify and quantify causal impacts from naturally occurring or programmatic variations on student learning outcomes
- Performed rigorous hypothesis testing and statistical inference to validate findings and inform pedagogical strategies
- Evaluated heterogeneous treatment effects (HTE) across diverse student populations to inform educational policy
- Delivered instruction in econometrics and microeconomics, cultivating analytical and quantitative skills in undergraduate students

Adjunct Professor | Nichols College | Dudley, MA | Dec 2022 – Jul 2024

- Taught DS 201 Introduction to Data Science, covering Python programming and predictive modeling for business applications
- Introduced students to robotics and automation using Microsoft Power Automate
- Developed students' skills in data management, visualization, and advanced modeling using Excel, PowerBI, and Tableau
- Explained and applied the four levels of analytics for Business Intelligence applications
- Conducted research on educational VR applications and facilitated faculty adoption
- Supervised a team of four undergraduates in assessing VR intervention impact through pre- and post-surveys

Adjunct Professor | Bryant University | Smithfield, RI | Dec 2023 – May 2024

- Instructor of ECON 114 Principles of Macroeconomics
- Taught the circular flow of income, GDP, inflation, unemployment, interest rates, international finance, and international trade
- Incorporated salient events into lectures to connect theory with current policy events
- Led projects where students collected, managed, visualized, and analyzed economic data using FRED
- Facilitated data-driven case studies analyzing how policy events correlate with economic variables
- Designed assignments for students to create dashboards analyzing how policy shifts influence key economic indicators

Publications

- Frydenberg, M., Mentzer, K., Patterson, A. (2026). *The Rapid Rise of Generative AI Adoption among First-Year College Students*. *Information Systems Education Journal* 24(1).
- Patterson, A. (2025). Assessing the Alignment of FOMC Statements with Minutes using Large Language Models. *Issues in Information Systems*, 26(2).
- Zhao, W., Patterson, A., Senthil Kumar C., Wang, Y., Gupta, A., Sadighi, S., Nayyar, N. (2025). *From Metrics to Meaning: Estimating User Feedback Using LLM-Based Evaluation*. *Amazon Science Internal Publication*.
- Patterson, A., Temple, C., Anderson, N., Rogalski, C., Mentzer, K. (2025). *The Virtual Stage: Virtual Reality Integration in Effective Speaking Courses*. *Information Systems Education Journal* 23(4).
- Patterson, A. (2024). Examining Text Consistency Amongst FOMC Statements and Minutes Subtext Using Deep Learning. *Issues in Information Systems*, 25(3).
- Grealis, T., Harmon, O., Patterson, A., & Tomolonis, P. (2024). *Excel Literacy in The Classroom*. *Business Education Innovation Journal*, 16 (2).
- Patterson, A., Frydenberg, M., Basma, L. (2024). Examining Generative Artificial Intelligence Adoption in Academia: a UTAUT perspective. *Issues in Information Systems*, 25(3).
- Rrupli, E., Frydenberg, M., Patterson, A., Mentzer, K. (2024). Examining Factors of Student AI Adoption through the Value-Based Adoption Model. *Issues in Information Systems*, 25(3).
- Mentzer, K., Frydenberg, M., & Patterson, A. (2024). Are Tech Savvy Students Tech Literate? Digital and Data Literacy Skills of First-Year College Students. *Information Systems Education Journal*, 22(3).
- Patterson, A., Mocarsky, M., Cho, J., Harmon, O., & Calvert, C. (2023). Teaching Data Literacy and Sports Economic Fundamentals Using Fantasy Sports. *Business Education Innovation Journal*, 15(1).

Presentations

- 2025 Discussant, "Teaching Economics More Efficiently (and Effectively) with Python", Southern Economic Association Annual Meeting, Tampa Bay, FL
- 2025 "Excel Proficiency - Assessing and Promoting" Southern Economic Association Annual Meeting, Tampa Bay, FL
- 2025 "Assessing the Alignment of FOMC Statements with Minutes using Large Language Models" International Association for Computer Information Systems, Clearwater, FL (virtual)
- 2025 "From Metrics to Meaning: Estimating User Feedback Using LLM-Based Evaluation" Amazon Economist Summit, Seattle, WA
- 2025 "Onboarding Session: Setting up Coding Environment and Best Practices" Amazon, EA Summit, Seattle, WA
- 2025 "Excel Literacy in The Classroom" American Economic Association: Allied Social Science Association Annual Meeting, San Francisco, CA
- 2024 "Data-Driven Decision-Making at Amazon" Topics in Tech at Bentley University, Waltham, MA (virtual)
- 2024 "Examining Text Consistency amongst FOMC Statements and Minutes Subtext using Deep Learning" International Association for Computer Information Systems, Atlantic Beach, FL (virtual)
- 2024 "Examining Text Consistency amongst FOMC Statements and Minutes Subtext using Deep Learning" 2nd Annual Research, Experiential, and Applied Learning Symposium, Dudley, MA
- 2024 "The Rapid Rise of AI Adoption amongst College Students" 2nd Annual Research, Experiential, and Applied Learning Symposium, Dudley, MA
- 2024 "Integrating VR into Effective Speaking" 2nd Annual Research, Experiential, and Applied Learning Symposium, Dudley, MA
- 2023 "Excel Literacy in the Classroom and for the Future" Annual American Economic Association: Conference on Teaching and Research in Economic Education, Portland, OR
- 2023 "Towards Measuring Data Literacy Skills" 1st Annual Research, Experiential, and Applied Learning Symposium, Dudley, MA
- 2023 "Excel Literacy in the Classroom and for the Future" poster session, American Economic Association: Allied Social Science Association Annual Meeting, New Orleans, LA
- 2022 "Using ESPN Fantasy Baseball Simulation to Teach Economic Concepts" poster session, American Economic Association: Allied Social Science Association Annual Meeting, Boston, MA (virtual)
- 2021 "Using ESPN Fantasy Baseball Simulation to Teach Economic Concepts" Western Economic Association International 96th Annual Meeting, Hawaii (virtual)
- 2021 "Using ESPN Fantasy Baseball Simulation to Teach Economic Concepts" Annual American Economic Association Conference on Teaching and Research in Economic Education, Portland, OR (virtual)
- 2020 "Using Baseball Simulation to Teach Economic Concepts" Southern Economic Association 90th Annual Meeting, New Orleans, LA (virtual)