Matthew Stuart

Assistant Professor of Applied Statistics Loyola University Chicago

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Employment

- Loyola University Chicago Department of Mathematics and Statistics Assistant Professor of Applied Statistics – 2022-Present
- Iowa State University Center for Survey Statistics and Methodology (CSSM) Research Assistant – 2016-2017, 2020-2022
- SpiderSmart Katy Learning Center Online Instructor – 2021 - 2022
- Iowa State University Department of Statistics Teaching Assistant – 2017-2019
- Transamerica Life Insurance Company Actuarial Student – 2014 Actuarial Intern – 2013

EDUCATION

• Ph.D. Statistics – Iowa State University, July 2022

Dissertation: "Statistical applications in actuarial science: From cryptocurrency to meme stocks to crop insurance"

• M.S. Statistics – Iowa State University, May 2019

Creative Component: "A computationally efficient method for selecting a split questionnaire design"

• B.S.B.A. Actuarial Science – Drake University, May 2014

PUBLICATIONS

JOURNAL PUBLICATIONS

• Stuart, M. and Yu, C. (2022), A computationally efficient method for selecting a split questionnaire design, *Communications in Statistics - Simulation and Computation*, Vol. 51, No. 5, 2464-2486. https://doi.org/10.1080/03610918.2019. 1697819

ARTICLES UNDER REVISION OR REVIEW

• Follett, L., Kou, S., **Stuart, M.**, and Yu, C. (2022) [alph.], Inverse Leverage Effect for Cryptocurrencies and Meme Stocks: a Comprehensive Framework, submitted to *Management Science* SSRN https://papers.ssrn.com/sol3/papers. cfm?abstract_id=4284817

ARTICLES IN PREPARATION

- The Impact of Stocks on Crop Insurance Premiums using Semiparametric Quantile Regression with Penalized B-Splines (with Hennessy, D. and Yu, C.)
- A Volatility Varying Leverage Effect for Meme Stocks (with Kou, S. and Yu, C.)

INVITED PRESENTATIONS

- "Inverse Leverage Effect for Cryptocurrencies and Meme Stocks: a Comprehensive Framework", Fall 2022 Loyola University Data Science Seminar
- "Estimation of Asset Models with Stochastic Volatility and Asymmetric Laplacian Jumps and its Application to Cryptocurrency", 2021 Joint Statistical Meetings (JSM), Best Student Paper Award Presentation, Virtual 2021.
- "Estimation of Asset Models with Stochastic Volatility and Asymmetric Laplacian Jumps and its Application to Cryptocurrency", 14th International Conference of Computational and Financial Econometrics, Virtual, 2020.

CONTRIBUTED PRESENTATIONS

- "A computationally efficient method for selecting a split questionnaire design", 2020 Communications on Statistical Practices (CSP), Sacramento, CA, 2020.
- "A computationally efficient method for selecting a split questionnaire design", 2019 Joint Statistical Meetings (JSM), Denver, CO, 2019.

TEACHING EXPERIENCE

Courses Instructed

- Loyola University, Chicago
 - STAT 305/405: Probability and Statistics II Spring 2023
 - * Taught concepts such as unbiased estimators, consistency, sufficient statistics, uniformly most powerful tests, and Bayes estimators
 - STAT 308: Applied Regression Analysis Fall 2022, Spring 2023
 - * Taught concepts such as multiple linear regression, ANOVA, prediction intervals, model selection, and logistic regression
 - STAT 103: Fundamentals of Statistics Fall 2022
 - * Taught concepts such as probability theory, normal distribution, central limit theorem, confidence intervals, hypothesis testing, and linear regression
- Iowa State University
 - STAT 430: Empirical Methods for the Computational Sciences Fall 2019
 - * Taught concepts such as confidence intervals, t-tests, method of moments, maximum likelihood, and Bayesian statistics
 - STAT 226: Introduction to Business Statistics I Fall 2017, Spring 2018, Fall 2018, Spring 2019
 - * Taught concepts such as normal distribution, central limit theorem, confidence intervals, hypothesis testing, and linear regression
 - * Ran weekly review session in Spring 2019 to help students review concepts that were troubling them
- SpiderSmart Katy Learning Center Summer 2021, Fall 2021
 - AP Statistics
 - $\ast\,$ Taught concepts such as normal distribution, linear regression, sampling and experimental methods, and probability theory

Courses as Lab Assistant

- Iowa State University
 - STAT 326: Introduction to Business Statistics II Summer 2019
 - * Instructed Concepts such as multiple linear regression, ANOVA, and prediction intervals

Committees Served

- Master's Students
 - Nora Hartnett (Expected Spring 2024)

PROFESSIONAL SERVICES

- Referee for Journals:
 - Statistical Methods and Applications
 - Journal of Quantitative Analysis in Sports
- Loyola University
 - Teaching Seminar Fall 2022
 - * Gave talk on using RStudio and RStudio Cloud in classroom teaching
- Iowa State University
 - Survey Working Group Student Coordinator Spring 2022
 - * Organized the schedule and weekly meetings for the survey working group
 - Graduate and Professional Student Senator (GPSS) Fall 2019-Spring 2021
 - * Represented the Department of Statistics in the Graduate Student Senate
 - * Aided in passing annual budgets and developing a new GPSS constitution
 - Member of student organizations Stat-ers and StatCOM
 - * Volunteered in annual STEAM night, which provides activities to teach statistics to elementary school students

Research Experience

CENTER FOR SURVEY STATISTICS AND METHODOLOGY

• National Resources Inventory (NRI) Grazingland Survey: 2020-Present

Assisted in weighting for single year and multi-year weights for NRI pastureland and rangeland surveys to help assess trends and status of health conditions on nonfederal grazinglands

• Pet Demographic Survey (PDS): 2016-2017

Assisted in developing a representative survey for and calculating point estimates for the 5-year PDS from the American Veterinary Medical Association (AVMA)

Honors

- American Statistical Association (ASA)
 - 2021 Best Student Paper Award of the ASA Business & Economics Section ("Estimation of asset models with stochastic volatility and asymmetric Laplacian jumps and its application to cryptocurrency")
- Iowa State University

- 2021 Research Excellence Award Recipient
- 2021 Vince Sposito Award winner for Excellence in Statistical Computing
- 2020 Teaching Excellence Award Recipient
- SOA Exams Passed
 - Exam C/4: May 2014
 - Exam MLC/3L: November 2013
 - Exam MFE/3F: March 2013
 - Exam P/1: January 2012
 - Exam FM/2: August 2011

Skills

TECHNOLOGICAL SKILLS

• R, C++, JMP, Excel, Shiny