

AUSTIN POLLOK

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Department of Data Science and Operations \diamond Bridge Hall 308 Los Angeles, CA 90089

RESEARCH INTERESTS

- Application of machine learning techniques in finance and FinTech
- Quantitative and empirical finance (volatility modeling, empirical option pricing, systematic strategies, optimal portfolio and ETF construction)
- Stochastic control and approximate dynamic programming (decision making under uncertainty, reinforcement learning)
- DeFi

ACADEMIC EXPERIENCE

University of Southern California *2022 - present*
Assistant Professor of Clinical Data Science and Operations

University of Southern California *2022*
Ph.D. Applied Mathematics (defended November 2021)

University of California, Irvine *2016*
B.S. Mathematics

PUBLICATIONS AND FORTHCOMING PAPERS

- “Kelly Criterion: From a Simple Random Walk to Lévy Processes,”
SIAM Journal of Financial Mathematics 12-1, 342-368, with Sergey Lototsky
- “Transient Feedback and Robust Signaling Gradients. Appendix: Feedback on Receptor Synthesis Rate,”
International Journal of Numerical Analysis and Modeling, 2016, with Frederic Y. Wan

WORKING PAPERS

- Is the Kelly Criterion Just Another Utility Function?, with Peter Carr
- Predicting Realized Variance Out-of-Sample: Does Anything Beat the Benchmark?, with Christopher S. Jones
- Gambling with an Edge: High Frequency Kelly Criterion and Fat Tails (Thesis Manuscript)

SERVICE EXPERIENCE

Academic Journal Refereeing *Ongoing*

• Frontiers of Mathematical Finance

Volunteer Mentor in UCI Math Community Educational Outreach (CEO) *Spring 2021*

Organization of graduate student seminar *Fall 2019, Spring 2020*

Designed upper division statistics empirical projects *Spring 2020*

Development and instruction of new department course

Fall 2019, Fall 2021

Facilitation of undergraduate sports betting summer research

Summer 2019

TALKS

Thrackle Talk: Options Market: Pricing, Hedging, and Microstructure

Spring 2022

Thrackle Talk: Decentralized Exchanges

Fall 2021

University of Minnesota Talk: High Frequency Volatility Forecasting with Machine Learning and the Variance Risk Premium

Fall 2021

QWAFAs (Quant Society) Talk: High Frequency Kelly Criterion and Fat Tails

Summer 2021

UCI Math CEO Talk: Community Outreach

Summer 2021

UCI Math Club Talk: Faces in Mathematics

Summer 2021

Tala Talk: Multivariate Kelly Criterion Applied to Loan Portfolio Construction

Fall 2019

TEACHING EXPERIENCE

USC Data Science and Operations Department

2022 - present

Instructor

- DSO 570 - The Analytics Edge: Data, Models, and Effective Decisions: Fall 2022 (MSBA)
- DSO 459 - Business Analytics Through Python: Spring 2022, Fall 2022 (Undergraduate)
- DSO 545 - Statistical Computing and Data Visualization: Summer 2022 (IBEAR MBA)

USC Mathematics Department

2016 - present

Teaching Assistant

- Math 114 - Intro to Statistics: Spring 2017, Fall 2018
- Math 125 - Calculus I: Fall 2016
- Math 226 - Calculus III: Fall 2017, Spring 2018, Summer 2019
- Math 408 - Mathematical Statistics: Spring 2019, Spring 2020
- Math 118 - Business Calculus: Fall 2019
- Math 499 - Consulting with Data Science in Python: Fall 2019, Spring 2022 (co-developed and co-taught course)
- Math 606 - Topics in Stochastic Processes: Understanding the Bichteler-Dellacherie Theorem: Summer 2020
- Math 541a - Mathematical Statistics: Spring 2021
- Math 606 - Singular Stochastic Differential Equations: Summer 2021
- Math 446 - Machine Learning Through Python: Fall 2021 (co-developed and co-taught course)
- Math 555 - Partial Differential Equations: Fall 2021

USC Finance and Business Economics Department

2019 - 2021

Teaching Assistant

- FBE 599 - Quantitative Investing: Fall 2019, Fall 2020, Fall 2021
- GSBA 539 - Macroeconomics: Spring 2020, Summer 2020
- GSBA 539 - Financial Markets: Summer 2020, Summer 2021, Spring 2022

NON-ACADEMIC EXPERIENCE

Critical Trading Group

Consultant

Thrackle

Consultant

Capital Group

Quantitative Research Data Engineer

AWARDS

USC (graduate) -

Theodore Edward Harris Prize for Excellence in Teaching,

Dornsife Merit-Based Department Fellowship

UCI (undergraduate) -

Howard Tucker Award in Mathematics, Phi Beta Kappa, Regent's Scholarship,

Track and Field Athletic Scholarship, Mathematical Computational Biology Undergraduate REU

COMPUTER SKILLS

Python, R, \LaTeX , HTML, Linux, Bash, Git, Docker, AWS