

Alexander Bernstein

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Education

University of California, Santa Barbara Ph.D. in Statistics <i>Dissertation:</i> “Long-Only Minimum Variance Portfolios Composition for Factor Models”	Santa Barbara, CA <i>Sept. 2025</i>
Washington University in St. Louis M.Sc. in Systems Science and Applied Mathematics B.A. in Mathematics and Economics, (Cum Laude)	St. Louis, MO <i>Dec. 2016</i> <i>May 2014</i>

Research

Research interests include **convex and portfolio optimization**, **factor models**, **asset pricing**, multivariate statistics, time-series analysis, stochastic processes, and applications of machine learning in finance.

Presentations

- Analytical Solutions To The Constrained Markowitz Problem Via Fixed Point Theory
- INFORMS Annual Meeting *Oct. 2023*
- Explicit Solutions for Position Constrained Minimum Variance Portfolios
- SIAM Conference on Applied and Computational Discrete Algorithms, **Online Poster** *July 2021*
 - CDAR Risk Seminar, UC Berkeley *March 2020*

Publications

Banerjee, T., **Bernstein, A.**, Feinstein, Z., (2025). “Dynamic clearing and contagion in financial networks”. *European Journal of Operational Research* 321.2, pp. 664–675.

Bernstein, A., Shkolnik, A., (2025). “Asymptotics of Quadratic Forms on a Simplex”. In Preparation.

Professional Experience

University of California, Santa Barbara <i>Teaching Assistant, Various Classes</i> • Utilized expertise in areas such as Statistical Theory, Stochastic Processes, Regression Analysis, Time Series, Financial Mathematics, and Risk Theory to teach students • Developed and graded student coursework <i>Graduate Student Mentor</i> • Guided undergraduate students on projects involving Financial Mathematics and Optimization • Directed students in preparation of poster presentation and formal report about results of their research	Santa Barbara, CA <i>Sept. 2017- June 2025</i> <i>Dec. 2019-June 2024</i>
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Epic Systems

- Technical Services Engineer* *Madison, WI*
Sept. 2014 - Sept. 2015
- Supported customers in the usage of their Electronic Medical Records system
 - Diagnosed customer requests and tailored software to fit their needs
 - Developed and implemented improvements to the Epic Codebase

Prozess Technologie

- Intern* *St. Louis, MO*
May 2013- May 2014
- Created a computational simulations to explore effectiveness of laboratory equipment
 - Tested, calibrated and validated laboratory equipment used in pharmaceutical manufacturing

Fellowships and Awards

Regents Fellowship, <i>UC Santa Barbara</i>	<i>2017-2018</i>
John M. Olin Prize for Excellence in Economics, <i>Washington University in St. Louis</i>	<i>2014</i>

Skills

Technical Knowledge

Expertise: Convex Optimization and Statistical Analysis

Strong Knowledge: Mathematical Statistics, Probability, Stochastic Analysis, Machine Learning, Time Series Analysis, Data Science, Options Pricing, and Risk Analysis

Programming Languages and Software

Strong Knowledge: R, Matlab, Python, NumPy, SciPy, Scikit-Learn, Pandas, L^AT_EX, Markdown and Linux

Working Knowledge: PyTorch, C, Java, JavaScript, NodeJS, SQL, MongoDB, AWS, Git, Intersystems Caché

References available upon request