

JUSTIN HEXEM

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EDUCATION

Master of Applied and Computational Mathematics, University of Washington, Seattle Expected June 2024
GPA: Overall - 3.94

Relevant Coursework: High-Performance Scientific Computing, Probability Theory, Computational Methods of Data Analysis, Applied Linear Algebra, Methods of Partial Differential Equations.

Bachelor of Science in Mathematics, California Polytechnic University San Luis Obispo 2017 - 2021
Concentration in Pure Mathematics with additional coursework completed in physics and computer science.

Member of Sigma Pi Fraternity

SKILLS

Technical Skills	Python, C++, MATLAB, Probability, Linear Algebra, Differential Equations
Soft Skills	Ability to explain complex ideas simply, able to adjust to unexpected challenges smoothly, effective in presenting ideas and findings to a group.

EXPERIENCE

Independent Study	June 2023 - Present
University of Washington	Seattle, WA

- Deepened understanding of probability theory through academic coursework, applying key concepts to design and implement coding projects.
- Enhanced computational efficiency of algorithms by implementing parallel computing techniques, utilizing libraries such as MPI and threads in C++.
- Successfully completed an advanced online course in dynamic programming, strengthening problem-solving skills in algorithmic complexity and optimization.

Research Student	June 2021 - September 2021
California Polytechnic University San Luis Obispo	San Luis Obispo, CA

- Conducted research in complex dynamics and linear algebra, leveraging MATLAB for data visualization and problem-solving, skills transferable to financial modeling and data visualization.
- Achieved two groundbreaking findings in the field, substantiated by rigorous mathematical proofs, demonstrating strong analytical and deductive reasoning.
- Articulated research findings to an academic audience, including faculty and research peers, showcasing effective communication skills crucial for interdisciplinary teamwork in quantitative finance.

CODING PROJECTS

Blackjack Card Counting Strategy Analyzer Engineered a Python script to simulate various blackjack card counting strategies, incorporating adjustable parameters to adapt to different house rules. Conducted rigorous statistical analysis to optimize the strategy, ultimately achieving profit outcomes that closely mirrored simulated projections. Applied this model in real-world conditions, validating the strategy with over \$1000 in earnings. The project required meticulous code and calculation verification, given the real financial stakes involved—a mindset directly applicable to risk management strategies in quantitative hedge funds.

Poker Equity Calculator Developed a poker equity calculator using C++ and Python to statistically analyze and compare the winning probabilities of various poker hands. The tool efficiently simulates thousands of games, allowing for comparison between specific or random hands. Leveraged object-oriented programming principles for modular code structure and utilized parallel computing for expedited simulations. The computational methods and statistical modeling techniques employed are directly applicable to risk and portfolio analysis in quantitative finance.