Ryan Padnis

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EDUCATION

Stanford University **September 2021 - June 2025**

Management Science & Engineering (B.S.) GPA: 3.7

- Extracurriculars: Stanford Blyth Fund, Business Association of Stanford Entrepreneurs, Stanford Wind Symphony, Stanford Alpha Epsilon Pi, Stanford University Mathematics Organization
- Coursework: Linear Algebra and Matrix Theory, Partial/Ordinary Differential Equations, Real Analysis, Programming Abstractions, Design and Analysis of Algorithms, Accounting for Managers and Entrepreneurs, Modern Portfolio Theory, Derivatives Trading Theory, Optimization, Stochastic Modeling.

Stanford University **January 2024 - December 2025**

Statistics (M.S.) GPA: 3.6

- Coursework: Measure and Probability Theory, Stochastic Processes, Machine Learning, Reinforcement Learning for Finance, Statistical Inference theory, Regression and Analysis of Variance, Reinforcement Learning Theory, Metric Spaces and Advanced Concepts of Analysis, Financial Statistics with Current Research, Statistical Arbitrage.

WORK EXPERIENCE

Alvarez & Marsal Capital Partners - Private Equity Analyst Intern **Summer 2024**

Stanford University - Decision & Risk Analysis Researcher **June 2023 - September 2023**

- Analyzed the effects of MLB's new rule changes using Statcast, Baseball Reference, and Pybaseball APIs in Python.
- Scraped and analyzed large-scale data sets with Pandas, NumPy, PyTorch, TensorFlow, and SciPy.
- Employed ridge and lasso regression analyses with gradient descent techniques to develop a better predictive statistics for the Wins Above Replacement (WAR) metric.
- Consolidated and Presented my findings to Management Science & Engineering department.

Marty Feldman SAT/ACT Prep **December 2020 - May 2023**
Tutor

- Worked with more than 40 students taking the SAT, ACT, and PSAT. Cultivated personal learning environment and gave deep insight into high level test taking strategies. Individualized the curriculum to best cater to the students' needs. Enhanced students' scores by up to 250 points on the SAT and 5 on the ACT.

Mathnasium **June 2020 - May 2021**

Instructor ******November 2020 Instructor of the Month.*

- Prepared students for their math classes in both remedial and enrichment settings.
- Collaborated in a fast paced, high volume team teaching environment. Worked with more than 150 students, mostly with 4 students at any given time.
- Completed 6 months of practical training in metacognitive skills. Learned how to properly navigate and guide students to understanding their thought process better.

RESEARCH: (LINK HERE)

Market Making in the High Frequency Trading Limit (Reinforcement Learning) **April 2024-June 2024**

- Built a high frequency limit order book based on S&P 500 intraday data. Backtested simulation to ensure SDE parameter consistency. Conducted a literature review on trading intensity, temporary pricing impact and stochastic policy architectures top construct a more realistic learning environment.
- Utilized Pytorch and policy gradient algorithms, such as Reinforce and Proximal Policy Optimization, to learn a high dimensional gaussian policy.

Approaching Mean Variance Efficiency For Large Portfolios (Financial Statistics) **April 2024-June 2024**

- Conducted high-leveled statistical and asymptotic analysis of the results of the 2018 paper by Ao, Li and Zheng on unconstrained portfolio optimization using MAXSER. Rigorously proved theoretical results.
- Used Least Angle Regression 10-fold cross validation and LASSO to validate the paper's results on both small and large market capitalization stocks. Used PCA to construct tradeable market factors that improved portfolio Sharpe threefold. Presented results in a lecture symposium.

Game Theory Optimal Heads Up Poker (Reinforcement Learning) **January 2024 - March 2024**

- Utilized Temporal Difference with eligibility traces, Monte Carlo methods, Q-learning, SARSA and Counter-Factual Regret Minimization for prediction and control of two agent Texas Hold'em strategy.
- Created an unexploitable shove or fold strategy with 35,000 Big Blind win rate per 10,000 hands.