

Allen Wu
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EDUCATION

Stanford University <i>MS, Management Science & Engineering. GPA: 3.92/4.00.</i>	Stanford, CA 2016 – 2018
University of Chicago <i>BA, Mathematics. GPA: 3.89/4.00.</i> <i>Honors: Phi Beta Kappa, Dean's List, National Merit Scholarship</i>	Chicago, IL 2011 – 2015

COURSEWORK

Math: Stochastic Processes, Analysis in \mathbb{R}^n , Honors Algebra, Optimization, Partial Differential Equations
Computer Science: Mining Massive Data Sets, Deep Learning, Algorithmic Techniques for Big Data, Design and Analysis of Algorithms, Decision Making Under Uncertainty, General Game Playing
Decision Theory: Risk Analysis, Stochastic Modeling, Financial Risk Analytics, Professional Decision Analysis

EXPERIENCE

Wizards of the Coast <i>Game Design Contractor</i> <ul style="list-style-type: none">• Game Development: Provided insight on the entertainment value, competitive balance, and replayability of new expansions for Magic: the Gathering, a strategy card game played by over 10 million people.	Renton, WA 2017 – 2018
Stanford <i>Course Assistant, Introduction to Decision Making</i> <ul style="list-style-type: none">• Teaching: Wrote and graded homework assignments and exams, held office hours, and advised students on a course project where they consulted with businesses and applied the tools taught in class.	Stanford, CA Summer 2017
Sandia National Laboratory <i>Intern, Resilience and Regulatory Effects</i> <ul style="list-style-type: none">• Modeling Research: Researched new economic models to evaluate their strengths and weaknesses.	Albuquerque, NM Summer 2014

PROJECTS

Probabilistic Risk Analysis of Colorado Wildfires <ul style="list-style-type: none">• Worked with officials, wildfire experts, and firefighters to determine the costs and benefits of implementing the International Wildland-Urban Interface Codes in Jefferson County, Colorado.• Designed and implemented a Markov time-series model to predict wildfire behavior and damages.	Spring 2018
SBA Loan Risk Analysis <ul style="list-style-type: none">• Evaluated the risks of asset-backed securities and portfolios of loans using linear and logistic regression, neural networks, and hazard rate modeling.• Compared the predictions, accuracy, sensitivity, and specificity of the different approaches.	Winter 2017
Playing Blackjack with Deep Q-Learning <ul style="list-style-type: none">• Implemented a blackjack state-machine following typical casino conventions.• Constructed and trained a deep Q-network in PyTorch to determine the optimal blackjack policy.	Winter 2017
Magic: the Gathering Hand Simulation <ul style="list-style-type: none">• Developed a Monte Carlo simulation framework for generating and interpreting opening hands, using it to determine how consistent particular decks are and to find optimal deck configurations.	Winter 2017

SKILLS

Fluent: Python (NumPy, SciPy, PyTorch, Pandas, Matplotlib), Java, Excel
Conversational: Clojure, Julia, TensorFlow, R, Stata, Spark, SQL, Mandarin
Communication: L^AT_EX, Markdown, Google Suite, Microsoft Office

INTERESTS

Magic: the Gathering

- Competed for 2+ years on the Pro Tour, the highest level of organized play, winning Grand Prix Albuquerque 2016.
- Ranked #17 on the live Elo leaderboard, with a rating of 2117.
- Built models to analyze tournament results, improve in-game decision-making, and forecast player behavior.
- Published a series of articles on channelfireball.com, one of the top Magic content websites.