

Mathematician-turned-software-engineer with a love for Game Theory Optimization (GTO). I am interested in how algorithmic reasoning can be applied to real-world conflict and decision-making.

Education

- May 2028 **University of Pennsylvania**
Bachelor's of Arts in Mathematics, Bachelors of Science in Statistics
Master of Science in Engineering in Computer Science
Coursework: Algorithms & Data Structures, Linear Algebra, Probability & Statistics, Cryptography, Numerical Analysis, Big Data Analytics, Statistical Modeling, Game Theory, Differential Equations

Technical Skills

- Frameworks Python, Java, OCaml, R, HTML/CSS, PyTorch, SQL, Scikit-learn, Pandas, NumPy, Matplotlib
Focus Areas AI/ML, NLP, Neural Networks, Game Theory, Financial Modeling, Statistical Inference

Internship Experience

- Feb 2024 – **Data & Analytics**, *Flushing CPA Tax Center*, New York, NY
May 2024
 - Engineered ETL pipelines automating high-volume data ingestion, improve projection accuracy by 15%.
 - Created Excel-based compliance detection macros; streamlined anomaly detection in client returns.
 - Built and validated regression models to estimate quarterly tax liabilities for SMBs.

Sep 2023 – **Legal Research & NLP**, *Offices of Jonathan Spodnick*, Trumbull, CT
Dec 2023
 - Conducted legal research and prepared discovery documentation for state-level personal injury cases.
 - Built a Python-based NLP tool to categorize legal texts and reduce manual review time.
 - Used statistical methods to analyze injury claim trends and settlement values.

Jun 2023 – Jul 2023 **Fintech Analyst**, *CITIC Securities*, Beijing, China
 - Contributed to listing proposal for \$11B spaceflight network company by analyzing growth metric
 - Assessed the market impact of regulatory penalties during CITIC's RMB regulatory penalty
 - Supported the preparation of a prospectus for issuing \$18 billion in convertible bonds for a regional bank.

Projects/Research

- Mar 2025 – **Pharmacokinetic Modeling & Neural Forecasting for PED Protocols**, *Independent*
Present
 - Engineering a Python-based NLP and modeling platform that uses neural networks to forecast anabolic response curves and recovery timelines, optimizing PED protocols using pharmacokinetic data, dosages, compound profiles, and genetic factors.
 - Integrated scientific literature parsing with LLM-backed summarization to extract dose-response data and synthesize experimental findings.
 - Developing front-end for athlete use cases & implementing validation pipelines via simulated case studies.

Jul 2024 – Aug 2024 **Research Assistant**, *Princeton Plasma Physics Lab (PPPL)*
 - Simulated charged particle behavior in tokamak reactors under varied magnetic/plasma conditions.
 - Built statistical models to predict fusion rates based on confinement and operational variables.

Sep 2023 – May 2024 **Bayesian Behavioral Modeling Approach to Opponent Profiling**, *Capstone Project*
 - Designed a Bayesian inference model to estimate opponent bluffing tendencies across multi-street poker hands using betting patterns, position, and stack context.
 - Built poker engine to simulate hand histories and dynamically update probabilistic opponent profiles.
 - Applied game-theoretic reasoning and EV optimization to generate counter-strategies against varying bluff frequencies and behavioral profiles.

Leadership/Extracurricular Activities

- Mar 2020 – **Co-Founder & CTO**, *Trumbull Tutors*, Trumbull, CT
May 2025
 - Co-founded 501(c)(3) Educational Nonprofit serving 200+ FGLI students across Fairfield County.
 - Managed a team of 40+ volunteers while leading full-stack development of a custom tutor-student matching portal (Python, Firebase, JavaScript) to streamline logistics and onboarding.
 - Built internal analytics dashboards to track tutor hours, engagement rates, and academic outcomes.
 - Oversaw financial operations, fundraising, & partnerships; secured over \$15K in local and state grants.

Oct 2024 – **Quant Finance Analyst**, *Wharton Investment and Trading Group*
May 2025
 - Used R (quantmod, tidyverse) for real-time financial data analysis and visualization.
 - Applied ARIMA and GARCH models for market forecasting and risk assessment.
 - Built Shiny dashboards to display predictive analytics and optimize portfolio strategies.