

# Harry Guan

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## EDUCATION

### Northwestern University

*B.A. in Mathematics and Computer Science, B.M. in Trombone Performance*

**Expected June 2027**

*Evanston, IL*

- **Cumulative GPA:** 3.9/4.0 | **Major GPA:** 4.0/4.0 | **Dean's List:** 6/6 Quarters
- **Relevant Coursework:** Probability and Stochastic Processes, Derivatives Markets, Deep Learning, Machine Learning, Operating Systems, Distributed Systems, Database Systems, Parallel Computing, Design and Analysis of Algorithms

## EXPERIENCE

### IMC Trading

*Incoming Quantitative Trading Intern*

**June 2026 – Aug. 2026**

*Chicago, IL*

### LinkedIn

*Incoming Software Engineer Intern - System Infrastructure*

**June 2025 – Sep. 2025**

*Mountain View, CA*

### IMC Trading

*Launchpad - Quantitative Trading Cohort*

**May 2025**

*Chicago, IL*

- Engaged in intensive lectures and simulations covering **options pricing**, **futures mechanics**, market microstructure, and quantitative trading strategies, with hands-on applications in risk management and position sizing
- Secured **1st place** out of 30 in IMC Trading's futures market-making competition by implementing dynamic bid-ask spread sizing using the **Avellaneda–Stoikov** model and data-feed pipeline monitoring to capture order-flow edge

### Susquehanna International Group

*Discovery Day - Technology Cohort*

**Apr. 2025**

*Bala Cynwyd, PA*

- Participated in lectures and technical workshops on **low-latency systems**, trading infrastructure; completed a hands-on **BTC data pipelining and arbitrage challenge** using Pandas simulating real-time strategy deployment

## PROJECTS

### NU FinTech Club Trading Competition ([GitHub](#))

**May 2025 – Present**

- Advancing a **C++ exchange simulator** to support dynamic market scenarios, including manual trading and multi-exchange arbitrage; researching current market structure to inform order book and participant design
- Engineered Python trading agents, including sporadic signal-based traders and participants placing information-rich large orders, to simulate complex market dynamics and test algorithm robustness in volatile exchange conditions

### Texas Hold'em Poker Solver ([GitHub](#))

**Dec. 2024 – Present**

- Developed a **Counterfactual Regret Minimization solver** to compute Nash Equilibria across over  $10^{17}$  **non-deterministic game states**, leveraging **ordinal bucketing** to reduce game tree analysis time by over **78%**
- Created an **open-source** research-focused C++ poker engine library, optimizing source code to **reduce average simulation runtime by 72.3%** by improving memory access patterns for **cache locality** and identifying bottlenecks

## HONORS AND AWARDS

**IMC Trading Market-Making Competition** | *1st Place Overall*

**USA Coding Olympiad** | *Gold Division, Top 7% in Contestants*

**IMC Trading Low Latency Competition** | *2nd Place Overall*

**Northwestern University Algorithmic Trading Competition** | *2nd Place Cryptocurrency Exchange*

**American Invitational Mathematics Examination Qualifier (4x)** | *Top 5% in the American Mathematics Competition*

## ADDITIONAL

**Programming Languages:** Python, C++, C, Golang, Rust, Java, TypeScript, Bash, x86 Assembly

**Frameworks/Libraries:** NumPy, PyTorch, scikit-learn, PyTest, Pandas, PyBind, GTest, Pandas, Node.js, Matplotlib

**Infrastructure:** UNIX, CUDA, Amazon Web Services, GCC, OpenMP, Nginx, Jenkins, Docker, Git, GitHub + Actions

**Interests:** Texas Hold'em Poker, Teamfight Tactics, League of Legends, Orchestral Conducting