Matthew Schaefer

Chicago, IL | matthew.schaefer@uchicago.edu | LinkedIn

EDUCATION

The University of Chicago — **Chicago, IL**
Master of Science in Financial Mathematics — **Expected December 2025**

- **Relevant Coursework:** Probability and Stochastic Processes, Computing for Finance, Option Pricing, Portfolio Optimization and Risk Management
- **Awards:** Maroon Merit Scholarship

Durham University — **Durham, UK**
Bachelor of Science in Computer Science and Economics (GPA: 3.74/4.0) — **June 2024**

- **Relevant Coursework:** Deep Learning, Reinforcement Learning, Economic Data Analysis, Data Science, Algorithms & Data Structures, Calculus & Linear Algebra, Probability & Statistics
- **Awards:** Hatfield Scholar

SKILLS

Computing: Python, VBA, Stata, MS Office
Knowledge: Financial Markets, Machine Learning, Econometrics, Statistical Analysis
Trading Products: Government Bonds, Interest Rate Swaps, Asset Swaps, Cross-Currency Swaps, Invoice Spreads

WORK EXPERIENCE

TD Securities — **London, UK**
G10 Rates Derivatives Summer Analyst — **June 2023 - September 2023**

- Designed interest rate (IR) swap pricing model in Excel based on yield curve constructed by bootstrapping market prices for MPC swaps, IR futures, and IR swaps pulled from Bloomberg API
- Developed VBA script that algorithmically generated bids for weekly UKTB auction, considering previous auction results, changes in 1, 3, and 6-month SONIA, inventory changes and observed market flow
- Conducted daily market briefings to global audience of ~800 traders spanning London, Singapore, New York, and Toronto
- Developed VBA script to scrape EUREX website for privately settled Exchange for Swaps trade data to provide enhanced color to senior traders
- Generated trade ideas to capitalize on short-term rate fluctuations driven by data releases. Expressed in MPC swap and STIR futures space

RESEARCH

Durham University — **Durham, UK**
Reinforcement Learning for Poker — **October 2023 - May 2024**

- Utilized PyTorch and SlumBot API to research the efficacy of Q-Learning, Dueling Deep Q-Learning and Proximal Policy Optimization in playing Heads-Up No-Limit Texas Hold'em Poker
- Determined that Dueling Deep Q-Learning agent was competitive against state-of-the-art Slum Bot, winning 49 out of 100 games

EXTRACURRICULAR

Durham University Cricket Club — **Durham, UK**
Student Athlete & Alumni Secretary — **October 2021 - June 2024**

- Engaged in rigorous weekly training and represented Durham University at highest level
- Communicated with alumni network to update them on club activities and facilitate donations

2024 IMC Prosperity 2 Trading Competition — **Remote**
Solo Competitor — **April 2024 - May 2024**

- Ranked #1 nationally as solo competitor by implementing pairs trading, cross-market arbitrage, ETF arbitrage, and volatility trading using Black-Scholes model

Durham University Quantitative Fund — **Durham, UK**
Team Lead — **October 2021 - May 2024**

- Researched, implemented and back tested algorithmic trading strategies across various asset classes using Python and the Quant Connect platform

ADDITIONAL INFORMATION

Interests: Sports, Sports Betting Arbitrage, Gambling Systems