SCOTT TURRO

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Financial Engineer with a distinct passion for Probability Theory and experience in Fixed Income Risk management. Adept at leveraging numerical and statistical methods in Python, R, and MATLAB to conduct quantitative research.

EDUCATION

The University of Chicago **Chicago, IL**
Master of Science in Financial Mathematics *Expected December 2025*
- Maroon Merit Scholarship ($40,000+)

University of Illinois at Urbana-Champaign **Urbana, IL**
Bachelor of Science in Statistics, *May 2022*
- Minors: Mathematics, Physics, and Computer Science

PROFESSIONAL EXPERIENCE

Magnetar Capital **Evanston, IL**
Office of the COO – Financial Engineer *April 2022 – May 2024*
- Conducted Monte Carlo simulations in MATLAB on a ~9.2B AuM credit portfolio using 100+ cashflow (CF) models, projecting risk/return profile of the Alternative Credit & Fixed Income (ACFI) business
- Performed and presented portfolio optimization of CFs to Global Head of ACFI, aiding monthly asset allocation
- Developed Collateralized Loan Obligations (CLOs) library and delivered to traders using Dockerized Streamlit app
- Implemented stochastic hazard rate models to capture time-varying default risk and improve pricing of CLOs
- Researched and presented the Forward Market Model which simulates the interest rate term structure as lognormal processes, leading to better risk management during the transition to SOFR curve

Fixed Income – Data Management Analyst *March 2021 – April 2022*
- Redesigned data pipeline using SQL Alchemy to automate pricing of bespoke tranche opportunities as cron job

Qubitekk, Inc **Remote**
Research and Development Team – Intern *May 2021 – August 2021*
- Improved quality assurance by implementing statistical tests which validate new entangled photon sources
- Devised new algorithm to sample lasers' joint frequency spectrum, needing 97% less measurements than full scan

Kwiat Information Research Group **Urbana, IL**
Physics Department – Undergraduate Researcher *November 2018 – May 2021*
- Researched Quantum Tomography and published Python Library to estimate spin of photons, which received 100+ downloads and assisted laboratories around the world validate experimental results
- Implemented Monte Carlo Techniques to estimate errors in the state's characteristics such as purity and entropy
- Utilized GitHub Actions and constructed test simulations to ensure a stable codebase
- Proposed Flask website to document the algorithm and library. Received approval and mentored new group members to assist in project https://quantumtomo.web.illinois.edu/
- Designated "Outstanding Undergraduate" by the Bardeen Chair of Physics, Paul Kwiat

COMPETITIONS & COURSEWORK

Q-Munity Hack-Q-Thon – 3rd Place *Spring 2021*
- Designed Flask website to perform portfolio optimization using quantum optimization techniques

Fundamentals of Deep Learning – A- *Fall 2021*
- Determined if chest x-rays exhibited covid-19 using convolutional network in PyTorch

Honors Individual Study – A+ *Fall 2021*
- Implemented a Latent Dirichlet Allocation model in Python and R to cluster binomial response data
- Fit the parameters of the model using Gibbs Sampling and employed Monte Carlo methods to estimate the bias

JP Morgan's Code for Good Hackathon – 1st Place *Fall 2020*
- Developed social media platform in Flask and stored user data on Google Cloud using Firebase

US Congressional App Contest – 1st Place *Spring 2018*
- Showcased custom physics engine to congresspeople on Capitol Hill, simulating hydrodynamic drag and collisions

Additional Information

Skills: Python || Docker || MATLAB || R || SQL || Monte Carlo || Regression || Optimization || Bayesian Inference
Leadership: Gymnastics Team Captain || Mentored Student in Research Group || Onboarded Team Members