# YUQIAN (TRUDY) LI

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## EDUCATION

Expected 12/24 **NEW YORK UNIVERSITY** New York, NY
**The Courant Institute of Mathematical Sciences**
**M.S. in Mathematics in Finance**

- ***Coursework:*** stochastic calculus, asset pricing, OOP (Python), machine learning, risk & portfolio management, financial securities & markets, interest rate & FX models, market microstructure
- ***Teaching Assistant*** for: Math for Economics II, Intro to Math Modeling

09/19 - 06/23 **NANKAI UNIVERSITY** Tianjin, China
**B.S. in Mathematics and Applied Mathematics, Concentration: Mathematical Finance**

- ***Coursework:*** mathematical analysis, advanced algebra, probability, statistics, operations research data structure & algorithms (C++), financial engineering, actuarial science, investments
- ***Honors/Fellowships:*** Graduate with Honors (top 3%), 5 fellowships in 3 years (top 5%)

## EXPERIENCE

03/23 - 05/23, 01/22 - 03/22 **CINDA SECURITIES** (Asset management firm with $10B AUM) Beijing, China
**Investment Management Intern (Python, MATLAB)**

- Investigated trends of 680+ convertible bonds from 2017 to 2022; weighted their implied volatility (IV) to monitor market IV; updated it daily for department's decision-making
- Collaborated with managers to design timing strategies based on volatility risk premium by drawing and updating IV surface of SSE 50 ETF options
- Researched 240+ bonds and REITs and wrote reports on them, supplying comprehensive analysis to senior management to inform their trading decisions

## PROJECTS

09/23 - 12/23 **4 Projects in Option Hedging and Financial Assets Data Analysis (Python)** New York, NY

- Option Hedging Simulation: Compared BM and BS model stock price paths; hedged options with self-financing portfolio and plotted P&L; calculated historical and break-even volatility
- Option Hedging with Historical Data: Hedged Apple's 6M options considering dividends; back-tested P&L; rolled by 1 day for 2 years and repeated; researched break-even volatility and skew
- Trinomial Model Construction: Hedged trinomial model by minimizing quadratic risk; compared its P&L with binomial models under equal initial endowment and equal delta conditions
- Data Analysis of Indices, Currency Pairs & Interest Rates: Computed time series and distribution of correlation and volatility; compared VIX and vol indicators modeled in EWMA and GARCH

02/23 - 05/23, 09/21 - 12/21 **Pricing of Snowball Structured Products (Python)** Online
(Associated with Nankai University and California Institute of Technology)

- Analyzed traits, evolution, and markets, highlighting returns and risks of structured products
- Used binomial model with 3K layers to price snowball VWO issued by Barclays Bank; co-authored and published paper: A Binomial Pricing Method for Snowball Autocallable
- Improved pricing algorithm with GARCH volatility model and Monte Carlo simulation method; conducted comprehensive analysis on return scenarios, sensitivity, and Greeks

02/22 - 02/22 **Mathematical Contest in Modeling - MCM (MATLAB)** Online

- Crafted optimal Water and Hydroelectric Power Sharing plan during drought for 2 reservoirs on Colorado River serving 4 industries across 5 states; won Finalist award - top 2% globally
- State Allocation Model: Collected data in 10+ fields; devised model with linear programming and differential equations; offered solutions considering 3 initial scenarios; predicted follow-ups
- Industry Allocation Model: Processed data using Lagrange interpolation and entropy methods; devised model with Spearman correlation coefficient and optimal approximation

## COMPUTATIONAL SKILLS / OTHER

***Programming Languages & Software:*** Python, SQL, C++, MATLAB, VBA, SPSS, Stata, EViews, Latex, MS Office
***Certificates:*** CFA Level 1, NCRE Level 2, Machine Learning (Coursera), Python for Everybody (Coursera)