

YOURAN PAN

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EDUCATION

- Expected 12/23 **NEW YORK UNIVERSITY** New York, NY
The Courant Institute of Mathematical Sciences
M.S. in Mathematics in Finance
- **Coursework:** object-oriented programming, Black-Scholes, derivative securities, quantitative portfolio theory, finite difference method, interest rate and FX models, dynamic asset pricing
 - **Expected Coursework:** time series analysis, advanced statistical inference, alternative financial data
- 08/18 - 05/22 **DUKE UNIVERSITY | DUKE KUNSHAN UNIVERSITY** Durham, NC | Kunshan, China
B.S. in Applied Mathematics
- **Coursework:** linear algebra, ODEs, PDEs, stochastic process, numerical analysis, mathematics of machine learning, econometrics
 - **Awards:** Mathematical Modeling Context (honorable mention) 2021, Mathorcup Mathematical Modeling Challenge 2020 (group won 1st place)

EXPERIENCE

- 08/23 – present **CARBON BASELINE** Shanghai, China (remote)
Consulting and Research Analyst Intern (Python)
- Conducted carbon credits insurance and ecological value mitigation pricing
 - Analyzed risks associated with green financial products
- 05/23 – present **PEKING UNIVERSITY** Beijing, China (remote)
Quantitative Trading Strategy Research Assistant (Python)
- Developed and researched cryptocurrency trading algorithms encompassing pairs trading and futures-spot arbitrage (has been put into use)
 - Researched optimal execution and slippage problem; created execution strategy based on VWAP
 - Developed, analyzed and compared portfolio allocation strategies based on Kelly Criterion, risk parity, mean-variance optimization, Black-Litterman, and maximum diversification
 - Analyzed impact of funding rates on cryptocurrency spot price risk metrics (VaR and ES); designed and conducted stress tests using jump diffusion model on statistically generated data
- 01/23 – 02/23 **IAQF ANNUAL ACADEMIC COMPETITION** New York, NY (remote)
Team Leader (Python)
- Developed pairs trading strategy with 3 methods: cointegration; copula (i.e., assumptions and how frequently to update parameters); and ML (polynomial L2 regularization loss function)
 - Generated trading signals for entry and exit based on price spreads
 - Managed risk based on half-life holding and volatility prediction; backtested copula and ML methods, and attained Sharpe ratios of 2.46 and 1.00, respectively

PROJECTS

- 02/23 - 02/23 **NEW YORK UNIVERSITY** New York, NY
LSA-Based Recommender Using Huggingface X Financial News Sentiment Dataset (Python)
- Created LSA recommender pipeline taking any corpus, vectorized it using TFIDF, and projected it onto reduced dimensional vector space; result: top 5 tweets closest to target corpus
 - Used L2 distance as proximity metric in latent semantic reduced dimensional space
- 02/23 - 02/23 **Using Deep Learning to Solve Forward-Backward Stochastic Differential Equations (Python)**
- Priced European option using Black-Scholes model under risk neutral measure
 - Converted Black-Scholes result to backward SDE using backward Kolmogorov's equation
 - Developed deep BSDE neural network based on simple feedforward neural network units
 - Compared pricing result of deep BSDE with Monte-Carlo's

COMPUTATIONAL SKILLS / OTHER

Programming Languages: Python, Java, MATLAB, SQL, Stata, R
Languages: English (fluent); Mandarin (native); Japanese (fluent)