

YIFAN WEI

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EDUCATION

NEW YORK UNIVERSITY

New York, NY

The Courant Institute of Mathematical Sciences

MS in Mathematics in Finance (Sep 2019 – Dec 2020)

- **Coursework:** Stochastic calculus (Brownian motion, Poisson process, Ito's Lemma, Monte Carlo simulation, Feynman-Kac formula, martingale), risk management (VaR, risk aversion, bond duration), interest rate & FX models, energy derivatives (oil futures, convenience yield, inventory theory), active portfolio management (CAPM, Bellman's principle, factors portfolio), MBS & securitized products (PAC and support bond, OAS model), machine learning in Python (exponential family and multivariate normal, linear models)

PURDUE UNIVERSITY (Graduated with Highest Distinction)

West Lafayette, IN

BS in Honors Mathematics, Actuarial Science & Statistics (Jan 2015 – May 2019) GPA: 3.97/4.0

- **Coursework:** Black-Scholes formula, option greeks (delta, gamma), calculus, probability, statistics, time series, linear algebra, linear regression, ODE, real analysis, abstract algebra

EXPERIENCE

GREENLAND FINANCIAL HOLDINGS GROUP

Shanghai, China

Asset Management Intern (May 2017 – Jul 2017)

- Conducted fundamental research over 200 stocks in biological medicine industry in Chinese Security Market; analyzed and selected stocks for traders to build portfolio
- Investigated annual reports of target companies to determine earning abilities and forecast future profitability; diagnosed financial conditions of target companies based on their financial ratios

PURDUE UNIVERSITY

West Lafayette, IN

REU in Mathematics Undergraduate Research Assistant (May 2018 – Aug 2018)

- Analyzed and classified generic four-circles configurations on Riemann sphere to study qualitative properties of real solutions of Painleve VI equations; prepared drafts for math paper using LaTeX

PROJECTS

NEW YORK UNIVERSITY

New York, NY

The Courant Institute of Mathematical Sciences

Energy Derivatives: Relative Analysis between Oil Time Spread and Inventory (July 2020 – Nov 2020)

- Modelled the dynamics of WTI oil futures time spread based on an inventory mean-reversion stochastic model; estimated parameters for the model; fitted the model with market data
- Studied the closed-form solution for model PDE; applied cointegration tests to study the inventory data; predicted the inventory trend using ARMA model; conducted model selection using AIC
- Explored trading signals for the oil time spread using mean-reversion strategy

Energy Derivatives: Oil Futures Trading Strategy (Feb 2020 – Mar 2020)

- Explored trading signals and designed trading strategy for oil futures; strategy achieved an annual return of 14%, a Sharpe ratio of 1.09 and a return over drawdown of 0.94 under 14 years back-test
- Studied and improved the rolling strategy, carry strategy and momentum strategy; conducted research for the WTI, RBOB, and Heating Oil price data and alternative data

Active Portfolio Management: Residual Return Strategy (Apr 2020 – May 2020)

- Conducted data cleaning for stocks listed in S&P 500 index; constructed optimal portfolio based on Markowitz portfolio and residual return signal; portfolio outperformed SPY by 10% on average
- Rebalanced portfolio daily and generated back-test reports using dynamic programming

Forex Volatility Smiles Calibration (Apr 2020 – May 2020)

- Calibrated volatility smiles for specified market conventions and market quote data under SABR model; approximated strikes for specified delta and option type

COMPUTER SKILLS/OTHER

Programming Languages: Python, Java, R, Excel

Other Software: Microsoft Office, LaTeX

Languages: Mandarin (native), English (fluent)

Certificates: Exam-FM (Financial Mathematics), Exam-P (Probability), VEE-APPSTATS (Applied Statistics), VEE-CORPFIN (Corporate Finance), VEE-ECON (Economics) offered by Society of Actuaries