YIN FU

(206) 889-7382 ∎ fuyin1999@gmail.com ∎ linkedin.com/in/yinfu1 ∎ https://github.com/fuyin19

EDUCATION

NEW YORK UNIVERSITY   New York, NY
The Courant Institute of Mathematical Sciences
M.S. in Mathematics in Finance (expected Dec. 2022)
- *Recent Coursework:* Stochastic calculus, derivative pricing, quantitative portfolio theory, market microstructure, risk management, scientific computing
- *Future Coursework:* Big data applications, advanced machine learning, statistical arbitrage

UNIVERSITY OF WASHINGTON   Seattle, WA
BS in Mathematics (Sept. 2017 – Jun. 2021)
- *Coursework:* Measure theory, probability, linear algebra, numerical analysis, statistics, ODEs and PDEs, introductory algebraic geometry and applications, functional analysis, topology
- *Honor:* Magna Cum Laude (Top 3.5%), Dean's List

EXPERIENCE

China Construction Bank, New York Branch   New York, NY
Risk Management Intern (Jun. 2022 - Aug. 2022)
- Built a country risk regressor leveraging ML algorithms (e.g., random forest, gradient boosting) based on macroeconomics factors, liquidity indicators, political environment, etc
- Developed both econometric and stochastic models (inspired by CIR) for the US real estate market, and calibrated model parameters to the market data from 1980 to 2022

Washington Experimental Mathematical Lab - WXML   Seattle, WA
Research Assistant (Apr. 2020 - Dec. 2020)
- Derived mathematical models and properties of number operators and Hamiltonians in bosonic quantum field theory
- Proved non-uniqueness of field configuration, given same Minkowski particle content
- Explained theoretical behavior of number operators' in real-world terms

International Business Machine Corp. - IBM   Beijing, China
Data Analyst Intern (Aug. 2020 - Sept. 2020)
- Used regularized linear regression model to predict smart city market size for 2020-2023
- Researched and ranked corporations in each smart city industry by market share, annual growth rate and investment strategy; conducted key success factor analysis

PROJECTS

NEW YORK UNIVERSITY   New York, NY
Simulation of Backward SDEs and Nonlinear PDEs (Python) - in progress
- Introduced Backward SDEs, and elaborated its connection to HJB-PDEs in finance
- Researched and implemented numerical methods for nonlinear PDEs based on ML techniques, and analyzed convergence, stability, etc

Local Volatility Model Calibration (Python)
- Calibrated SVI parameterization with March 25th OTM S&P option data to a continuous implied volatility surface, and computed local volatility surface

UNIVERSITY OF WASHINGTON   Seattle, WA
Introduction to Numerical Methods for Solving Large and Sparse Linear Systems (MATLAB)
- Elaborated motivation of Krylov subspace methods by presenting mathematical proof, and implemented conjugate gradient method in MATLAB
- Researched numerical limitations of current best algorithm to solve sparse linear systems

COMPUTATIONAL SKILLS/OTHER

Programming Languages: Python, Java, MATLAB, Mathematica
Languages: Mandarin (native), English (fluent), Japanese (intermediate)