

YIN FU

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EDUCATION

NEW YORK UNIVERSITY

New York, NY

The Courant Institute of Mathematical Sciences

M.S. in Mathematics in Finance (expected Dec. 2022)

- **Coursework:** Stochastic calculus, Black-Scholes equation, derivative securities, quantitative portfolio theory, finite difference method, data-driven models, scientific computing
- **Future Coursework:** Continuous finance, big data applications, data science and machine learning in quantitative finance, advanced econometrics

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:** Dean's List, Magna Cum Laude

EXPERIENCE

Washington Experimental Mathematical Lab - WXML

Seattle, WA

Undergraduate Researcher (Apr. 2020 - Dec. 2020)

- Derived properties of number operators and Hamiltonians in bosonic quantum field theory
- Proved the non-uniqueness of field configuration given the same Minkowski particle content
- Presented the conjecture of non-equivalence of the equality in Minkowski and Rindler particle contents for any pair of quantum field configurations
- Interpreted the behavior of the number operators to integrate a theoretical description of particles in quantum field theory

International Business Machine Corp. - IBM

Seattle, WA

Assistant of Consulting Director (Aug. 2020 - Sept. 2020)

- Investigated the current state of smart cities in China based on weighted measurements in market size, technology investments, and GDP; customized development strategies for smart cities in different geographical regions
- Utilized regression models in MATLAB to predict the 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, and conducted key success factor analysis; presented the essential finding to the supervisor and organized the material for future reference

PROJECTS

UNIVERSITY OF WASHINGTON

Seattle, WA

Machine Learning in Predicting Credit Card Application Approval (Python)

- Cleaned the raw data of credit card application from the UCI machine learning repository
- Constructed an automatic predictor leveraging the logistic regression from Scikit-Learn with 86% accuracy.
- Performed statistical tests to analyze the independence of gender/ethnicity and the decision of credit card approval

Introduction to Methods for Solving Large and Sparse Linear Systems (MATLAB)

- Elaborated the motivation of Krylov subspace methods by presenting a mathematical proof
- Implemented the conjugate gradient method in MATLAB, and analyzed its connection to Krylov subspace methods
- Researched the complexity and numerical limitation of the current best algorithm in solving large and sparse linear system as a multi-vector extension of the conjugate gradient method

COMPUTATIONAL SKILLS/OTHER

Programming Languages: Java, Python, MATLAB, Mathematica

Languages: Mandarin (native), English (fluent), Japanese (intermediate)