Vivian (Jingcheng) Yu

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EDUCATION

UNIVERSITY OF WATERLOO   Waterloo, ON

Ph.D. in Actuarial Science   GPA: 91%   Sep 2024 - Present

- *Relevant Courses: Theory of Probability 2, Deep Learning, Stochastic Differential Equation, Financial Econometrics*
- **Teaching Certifications: Fundamentals of University Teaching Program; Certificate in University Teaching (In Progress)**

UNIVERSITY OF CALIFORNIA, LOS ANGELES   Los Angeles, CA

Master of Financial Engineering   GPA 3.82/4.0   Dec 2022

- *Relevant Courses:* Stochastic Calculus, Credit Risk, Econometric, Data Analysis & Machine Learning, Computational Methods in Finance, Derivatives, Fixed Income, Financial Risk Management
- *Activities:* Student Council Member

UNIVERSITY OF MANITOBA   Winnipeg, MB

B.S., Actuarial Mathematics/ Management   4.13/4.50 (Major GPA: 4.21/4.50)   Dec 2019
Honor: First Class Honor, Dean's Honor List

MEMBERSHIP & CERTIFICATIONS

- Fellow of the Society of Actuaries (FSA)
- Chartered Enterprise Risk Analyst of the Society of Actuaries (CERA)
- CFA Level II Candidate

RESEARCH & PROJECTS

Submodular Risk Measures (Working Paper)   Aug 2025 - Present
Advisor: Ruodu Wang

- Developed a theoretical framework for submodular risk measures, enhancing the understanding of risk aggregation in complex financial systems.
- Proved characterization results for major risk families (e.g., Expected Shortfall, distortion risk), clarifying their mathematical properties under extreme market conditions.
- Authored a comprehensive manuscript consolidating proofs and definitions, demonstrating strong capability in structuring complex technical knowledge.

Classification and Decision Tree Model for Portfolio Design (UCLA Capstone Project in Financial Engineering)
                                                                                                       Mar - Dec 2022
Academic Advisor: Lars Lochstoer (UCLA Anderson), Company Advisor: Gina Sanchez (Chantico Global)

- Collaborated in a multidisciplinary team guided by academic and industry advisors to analyze asset performance using CART models across 14 asset classes and 73 macroeconomic variables.
- Applied Rolling Window Analysis to enhance model robustness, consistently identifying 'Equity (Above Average)' and 'BAMLHE00EHYISYTW (D)' in S&P Global Infrastructure Total Return Index as assets with stable positive influence over different models and time periods.
- Presented findings that revealed the dynamic nature of feature importance in CART models, including variations in important features over different rolling periods and sensitivity to specific macroeconomic factors, offering valuable insights for adapting to different economic conditions.

Triggered Shorting Strategy on VIX (2022 IAQF Academic Competition Project)   May - Jun 2022

- Leadership in State Identification Models: Led a team to calibrate a 7-state Hidden Markov Model and a 3-state K-means clustering model, effectively dividing market performance into different states.
- Expertise in Neural Network Modeling: Employed Artificial Neural Networks using outputs from the cluster model, HMM model, and forward-stepwise-selection logit model, resulting in strong performance in predicting a binary market with only one error during the testing periods.

- High-Performing Short Strategy: Implemented a short strategy in identified negative market conditions, yielding an average return of 173.5%, which is 154% higher than the market return.

EXPERIENCE

UNIVERSITY OF WATERLOO Waterloo, ON

Teaching Assistant Sep 2024 - Present

- Facilitated Interactive Learning: Lead tutorials for undergraduate actuarial students, simplifying complex mathematical and risk management theories into accessible, engaging concepts.
- Student Mentorship: Provide personalized guidance during office hours, identifying individual learning gaps and adapting teaching strategies to support students with diverse learning styles.
- Curriculum Collaboration: Collaborate closely with professors to ensure the smooth delivery of course materials and fair assessment of student progress.

Academic Research Reviews and Grading (Society of Actuaries) Remote

Reviewer Aug 2022 – Mar 2024

- Served on the Review Committee for research paper evaluations by industry and academia.
- Contributed to various stages of the review process, ensuring high-quality assessments.
- Participated in the assessment of notable research papers such as 'Big Tech & Insurance' and 'Zero Knowledge Proof'.
- Acted as an end-of-module assessment grader for the Society of Actuaries, ensuring fair and thorough evaluations.

UNIVERSITY OF CALIFORNIA, LOS ANGELES Los Angeles, CA

Teaching Assistant Sep – Dec 2022

- Delivered tutorial lectures on stochastic calculus, ensuring comprehensive understanding.
- Provided academic support and guidance to students through grading assignments and proctoring exams.

ERNST & YOUNG GLOBAL CONSULTING SERVICES New York, NY

Actuarial Consultant Jan – Sep 2023

- Applied algorithmic optimization techniques in Python, including Simulated Annealing (SA) and Genetic Algorithm (GA), to optimize portfolios with liabilities and reinvestments.
- Developed a simulated algorithm efficiently solving complex problems while minimizing initial assets, which reduced financing cost by 50%.

CALIFORNIA DEPARTMENT OF INSURANCE Los Angeles, CA

Actuarial Student Assistant Jun – Sep 2022

- Conducted in-depth research on ISO filings and provided recommendations for revised guidelines.
- Consulted with ISO to address confusions and presented results to the department, improving on risk assessment.
- Redeveloped the Class Plan Application using VBA coding in Excel, resulting in a 30% reduction in processing time.

SKILLS

- AI & Efficiency: AI-Augmented Development (Gemini/Codex for rapid prototyping), LLM Integration
- Programming: Python (Proficient), R, SQL
- Libraries & Frameworks: pandas, NumPy, scikit-learn, TensorFlow, Tidyverse (R)
- Domain Knowledge: Financial Modeling, Risk Analysis, Stochastic Calculus