Zihan Tang

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EDUCATION

Ph. D. in Accounting, University of Minnesota (Twin Cities) — **Minnesota, United States**
Carlson School of Management — *Jan 2024 - Present*
- GPA: 3.8/4.0

Master in Financial Engineering, EPFL — **Vaud, Switzerland**
College of Management of Technology — *Sep 2021 - Aug 2023*
- GPA: 5.3/6.00

Honors Bachelor of Mathematics, University of Waterloo — **Ontario, Canada**
Mathematics Department — *Sep 2018 - Aug 2021*
- Major: Mathematical Finance &Statistics
- GPA: 93/100 (**Rank 1**)

PUBLICATIONS (*denotes co-first author)

Zihan Tang* and Xinyu Li*. Sentiment analysis on inflation after covid-19, 2022 [published on Vol.10, No.1, 2023 issues at *Applied Economics and Finance*]. URL: `https://arxiv.org/abs/2209.14737`, `doi: 10.48550/ARXIV.2209.14737`.

PROJECTS

Continuous Trajectory Generation with DDIM and Cubic Spline Networks
Sep 2023 – Dec 2023, EPFL
- Filtered and pre-processed multimodal data to ensure high-quality, consistent inputs for a diffusion-based robotic trajectory generation framework.
- Conducted rigorous comparisons between DDPM and DDIM approaches, developing proofs to demonstrate DDIM's superior inference efficiency and model performance.
- Performed extensive hyperparameter testing to fine-tune model accuracy and real-time adaptability, and authored the ethical risk analysis, outlining strategies to mitigate safety, fairness, and privacy concerns in robotic applications.

Model-Predictive Control for Crypto Price Stabilization via Derivatives Trading
Jun 2022 – Oct 2022, ETH
- Conducted a comprehensive literature review of the Black–Scholes framework and explored alternative jump-diffusion models (e.g., Stochastic Volatility with Jumps) involving Poisson processes.
- Investigated the feasibility of SMPC for dynamic hedging of European call options, emphasizing real-time computational efficiency and risk mitigation strategies.
- Developed and tested SMPC-based hedging algorithms in both real and simulated cryptocurrency markets, demonstrating effective price stabilization under volatility.
- Analyzed the interplay between model parameter estimation, liquidity constraints, and hedging performance, refining the approach for broader applications in algorithmic trading and risk management.

Pricing Various Convertible Bonds of JNJ Stock
Mar 2022 – May 2022, EPFL
- Developed a Cox-Ross-Rubinstein binomial tree model to value multiple convertible bond structures (including callable convertibles), calibrating parameters to historical market data.
- Performed extensive sensitivity analyses on interest rates, volatility, and bond-specific features to gauge their effects on valuation.
- Built and executed Monte Carlo simulations in MATLAB to assess expropriation risk across different bond issues, informing risk management and hedging strategies.

Analysis of Security CMLTI 2006-NC2 in the subprime crisis of 2007-2009
Feb 2022 – Apr 2022, EPFL
- Performed an in-depth examination of a non-agency mortgage-backed security comprising 4,499 loans,

highlighting its contribution to the subprime crisis.
- Constructed and calibrated logit models in Python to predict loan prepayments and defaults, elucidating the impact of overheated housing markets and rating agency practices.
- Assessed the effectiveness of Basel III regulations in mitigating systemic risks through scenario analysis.

Monetary-Fiscal Response to Public Debt Accumulation in Covid-19 Crisis
Oct 2021 – Dec 2021, EPFL

- Developed a market equilibrium framework using a basic New Keynesian model, incorporating a representative agent, firms, the government, and the central bank.
- Analyzed the interplay between monetary and fiscal policies, focusing on how policy responses vary under different market conditions.
- Conducted scenario analyses of various policy shocks and identified strategies to mitigate the crisis effectively.

HONORS and AWARDS

- **University of Waterloo President's Scholarship** 2018, 2019
- **Dean's Graduate Honours List** 2018-2021
- **Arijit Mukherji PhD Fellowship** 2024,2025
- **Ernest Heileman PhD Fellowship** 2024

TEACHING

University of Waterloo **Waterloo, Canada**
TA to Dr.Jason Bell – Advanced Calculus *Sep 2020 – Apr 2021*
University of Minnesota Twin Cities **Minneapolis, United States**
TA to Dr. Joshua Madsen – Financial Data Analytics *Jan 2025 – May 2025*

WORK EXPERIENCE

China Bohai Bank Co., Ltd **Chengdu, China**
Investment Banking Analyst *Feb 2023 – Dec 2023*

- Conducted quantitative and qualitative analyses for CIDIBs, corporate bonds, non-financial corporate debt instruments, and ABS. Evaluated creditworthiness, market conditions, and issuance strategies to inform risk-adjusted financing decisions.
- Collaborated with the R&D team to develop unified data processing and analysis tools (e.g., FPA scale, intermediate business income, and public finance). Streamlined data pipelines and leveraged AI to enhance real-time financial modeling and performance assessment.
- Assisted investment managers with comprehensive deal support, including compliance documentation, cross-departmental coordination, and market research, ensuring efficient execution of capital market transactions.

SKILLS

- **Data Skills**: Python, R, Matlab, Stata, Tableau, SQL, BigQuery, Alteryx, LaTex
- **Language:** Chinese(native), English(fluent), French(fluent)
- **Interest:** Sudoku, Violin, Piano, Cooking