Yuan Xu

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Education

University of Michigan **Ann Arbor, MI**
Master of Science in Quantitative Finance and Risk Management 08/2023-12/2024 (Expected)

- Courses: Financial Mathematics, Machine Learning, Optimization, Regression, Stochastic Process, Time Series Analysis

University of Sydney **Sydney, Australia**
Bachelor of Commerce (majoring in Finance/Mathematics) & Bachelor of Applied Mathematics (Honors) 02/2019-07/2023

- GPA: 3.66/4.0 | Awards: Upper Second-Class Honors; Vice Chancellor's Global Mobility Scholarship
- Courses: Probability Theory, Numerical Analysis (MATLAB), Python, Advanced Calculus, Dynamical System, Real Analysis, Derivatives Pricing, Fixed Income Securities, Portfolio Management, Corporate Finance, Micro/Macroeconomics

Professional Experience

Strategy Intern, Department of Industry Research | China Great Wall Securities Co., Ltd. 08/2022-11/2022

- Conducted a cyclical analysis on the Chinese tanker transportation industry through time-series decomposition and Fourier analysis using Python, and quantified cyclical patterns with a 95% confidence interval, contributing data-driven insights for relevant reports writing
- Participated in a forecasting research on Chinese operational system and database industry development, by processing data from 30+ domestic and international companies using Wind database, visualizing with PowerBI, summarizing findings and presenting in internal meetings, and results were incorporated into related commercial research reports

ESG Research Intern, Department of ESG Investment | Beijing Institute of Finance and Sustainability 12/2021-01/2022

- Developed a web-scraping algorithm by Python to collect about 300 ESG-related policies issued by 7 national ministries in the past ten years in a compliant and legal manner, and classified them by extracting key points of the policy content
- Proposed a basic summary and forecast on the challenges and opportunities for carbon futures trading market in China by conducting field research at the Guangzhou Futures Exchange and collecting secondary data, and presented findings in internal meetings, which were well-received and adopted

Research Assistant Intern, Department of Investment Research | Dayou Futures Co., Ltd. 07/2021-08/2021

- Assisted in producing a feasibility report on hedging with PTA futures contracts for new clients, responsible for writing the hedging process and case analysis, which was subsequently adopted
- Assisted in collecting weekly steel industry data, responsible for sourcing futures and spot prices for steel-related products such as rebar and coke from the Wind database, and compiling a comprehensive price summary using Excel
- Implemented a Dual Moving Average strategy in Python and backtested it on rebar futures data from March 1, 2021 to June 30, 2021, achieving an annualized return of 39% and a Sharpe ratio of 1.22

Research Experience

PDE Models for the Distribution of Ingested Lipids in Macrophages in Atherosclerotic Plaque **University of Sydney**
Researcher (supervised by Prof. Mary Myerscough) 08/2022-07/2023

- Innovated research subjects and pioneered the use of controlled variable methods and partial differential equations to study the lipid distribution within plaques, rectifying deficiencies in the existing models
- Developed a numerical scheme in Python independently leveraging Fourier transform and finite difference method, which solved the model with desirable accuracy and achieved a 2.7x speedup compared to algorithms used in similar research
- Identified 3 key findings out of 10+ results, visualized using Matplotlib and Seaborn in Python and presented to scholars
- Completed an academic thesis independently which is currently under review for publication

Skills

- **Languages**: Mandarin Chinese (native), English (fluent)
- **Technical Skills**: Python (NumPy, SciPy, Seaborn, BeautifulSoup, Pandas), MATLAB, R, SQL, Power BI, MS Office