Jiayi Zhang

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EDUCATION

UNIVERSITY OF MICHIGAN *Ann Arbor, MI*

Master of Science in Quantitative Finance and Risk Management *September 2017-Expected May 2019*

***Course Highlights*:** Financial Derivatives, Derivative Pricing, Stochastic Calculus for Finance in Discrete time and Continuous Time, Computational Finance, Linear Regression in R, Statistical Analysis of Financial Data, Analysis of Time Series, Machine Learning and Investment Strategies

UNIVERSITY OF MINNESOTA, TWIN CITIES *Minneapolis, MN*

Bachelor of Science in Mathematics-Actuarial Science Specialization GPA:3.71 *September 2014-May 2017*

***Course Highlights*:** Numerical Analysis, Stochastic Process, Mathematics Modeling, PDE, ODE, Complex Analysis, Database Syste in SQL, Advanced programming in Clojure, Econometrics, Risk Management, Financial Reporting, Finance Fundamentals, Financial markets and Business Strategy

WORK EXPERIENCE

CHINA MERCHANTS SECURITIES *Shenzhen, China*

Asset-backed Securities Analyst *May 2016-August 2016*

- Used MATLAB to build models to predict future cash flows of 10 securitization projects for clients who are Big Four commercial banks, including the first credit card bad-asset securitization case worldwide; resulting models became leading references for future securitization projects
- Enhanced interpersonal skills by participating in due diligence of 5 securitization projects and facilitating cross-party communication, and performed business model analysis to study securities market and do researches on new derivatives
- Drafted and improved prospectus and project specifications, declared material to Central Bank, and wrote bi-weekly reports

CHINA SCIENCE & MERCHANTS VENTURE CAPITAL MANAGEMENT *Shenzhen, China*

Private Equity Investment Analyst *May 2015-August 2015*

- Drafted merging and restructuring scheme for nonferrous metal company in Hong Kong (HKEx: 8306), including data-exporting from Wind and Bloomberg, stock price calculation, equity distribution, and financing capital analysis
- Participated in due diligence of several energy and mineral companies and implemented field investigation, business model analysis and accounting and legal document audits
- Responsible for following up a financing project between Zoomlion Logistics and a local company, and reported latest progress weekly

PROJECTS

RESEARCH ON THE MACROSCOPIC BEHAVIOR OF EQUITY MARKETS: THEORY AND APPLICATION *Ann Arbor, MI, April 2018-Expected January 2019*

- Proposed a macroscopic model of the equity market based on the physics of fluid dynamics which is illustrated in stochastic differential equations
- Developed sensors triggered by properties of the macroscopic variables, density and velocity, that can alert regulators to abnormal activity, used fluid flow in physics to measure the irregularities found in the behavior of financial markets, and tested the proposed sensors on flash crash
- Currently working on deep learning in finance in order to use deep neural network to determine abnormal and normal days

RESEARCH ON FINANCIAL VOLATILITY OF NASDAQ AND ITS PREDICTION *Ann Arbor, MI, March 2018*

- Collected data from Bloomberg, applied R to write loops to obtain various GARCH models, selected the model with minimum AIC, performed diagnostics by analyzing ACF plot and residuals, and got its maximum likelihood value compared with that of POMP model
- Applied R to build POMP model, fitted the Stochastic Leverage Model to NASDAQ data, and performed the diagnostics

INVESTIGATION ON OPTIMAL BETTING STRATEGIES IN TEXAS HOLD'EM *Minneapolis, MN,April 2017*

- Made assumptions matching the goals of the project, selected starting hands based on desired expectations, applied MATLAB to write functions
- Functions were to i) get the probabilities of occurrences of the starting hands, ii) randomize two cards, compare with the selected starting hands and decide betting or not based on the assumptions, iii) randomize one card and consider continuous betting strategies, iv) create loops to repeat iii) until get all the five cards, and v) calculated the expectations.

SKILLS AND CERTIFICATIONS

Programming skills*:* MATLAB, R, Python, SQL, Clojure (functional programming language)

Certifications*:* Exam Probability, and Exam MFE (Associate of the Society of Actuaries)