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 Actuarial Science 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

GUANGFA SECURITIES *Shanghai, China*

Quantitative Macroeconomic Research Analyst *June 2018-Present*

- **Economic indicators predictions**: analyzed the compositions of PPI and searched for high frequency price indicators highly correlated with the components, applied R to conduct regressions twice to get the fitted values of components and PPI, analyzed residuals and back-tested the models
- **Analytical methods to researching industries**: graphed all industries under their investing-production relations, colored the graphs in eight analysis aspects, and researched the prosperity of industries by shades of the colors as well as the effects to the downstream from the upstream
- **Data-analysis tools enhancement**: used Offset, Index, Match etc. in Excel to formulate the data-processing procedures, improved the tools by using Conditional Formatting to automatically perform coloring and present analysis results, and cut labor hours by 80%
- **Problem-solving skills and a good taste in research**: worked on subjects that rarely had definitive answers, and went deep and wide into them

CHINA MERCHANTS SECURITIES *Shenzhen, China*

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

- **Future cash flows prediction model**: Used MATLAB to predict future cash flows of 10 securitization projects from Big Four commercial banks, including the first default credit-card-backed securitization worldwide and made the models be leading references for future securitization projects
- **Due diligence coordination**: Enhanced interpersonal skills by participating in due diligence of 5 securitization projects and facilitating cross-party communication, studied securities market by researching business models and new derivatives, and completed bi-weekly reports

PROJECTS

RESEARCH ON CLUSTERING-BASED FINANCIAL MARKETS PREDICTION USING DEEP NEURAL NETWORKS

Ann Arbor, MI, April 2018-Present

- **Stock prices processing with Panda and Clustering**: Collected minute-to-minute stock prices in all three indexes (NASDAQ, NYSE, NYSE AMEX) from Bloomberg and Factset, applied Panda package in Python to handle missing data and reduce dimension, computed stocks' financial indicators from the pre-processed data, and applied clustering algorithm to divide the stocks into eight groups based on the financial indicators
- **Deep Neural Networks applications and back-testing**: Separated stock prices into training and testing sets, used Python to apply DNN on training sets to train the data to predict abnormal and normal days of equity market**,** back-tested the trained DNN on testing sets, got the prediction accuracy in each clustering group, and compared the prediction performance with non-clustering ANN and support vector machine model

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

- **GARCH models selection and diagnostics**: Applied R to obtain various GARCH models, selected the model with minimum AIC, performed diagnostics by analyzing the correlations of residuals and the normality of residuals, and back-tested the model to see the prediction performance
- **POMP model applications and comparisons between two models**: Built POMP model based on the Stochastic volatility Model with random-walk leverage, checked the convergence of the parameters in the model, and compared maximum likelihood values between two models

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

- Made assumptions based on goals of the project, selected starting hands based on desired expectations, applied MATLAB to achieve the process

SKILLS AND CERTIFICATIONS

Programming skills*:* MATLAB, R, Python, SQL, and Clojure **Database Tools**: Bloomberg and Factset **Office Tools:** Microsoft Excel

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