WEIZHENG ZHANG

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EDUCATION

School of Mathematics, Sun Yat-sen University Guangzhou, China
Bachelor of Science (Double Degree), Major in Pure and Applied Mathematics *Mar. 2016 - June 2019*
Major GPA: 95/100 (117 Credits)
Courses: Mathematical Analysis III (97), Real Analysis (99), Probability (100), Algebra (99), Functional Analysis (96), Advanced Probability (96), Matrix Analysis (96), Topology (94), Discrete Mathematics (95), Multivariate Statistics (100), Stochastic Process (93), Measure Theory (92), Differential Equations (94), Complex Data Analysis (98), Data Structures & Algorithms (96), Nonparametric Statistics (94), C^{++} Programming (97), Digital Image Processing (9?), etc.

International School of Business and Finance, Sun Yat-sen University Zhuhai, China
Bachelor of Economics, Major in Finance *Aug. 2013 - June 2017*
GPA: overall 90/100 (158 Credits), major 92/100 (106 Credits). Rank 4% in the last 3 academic years.
Courses: Financial Engineering (99), Business Statistics (97), Financial Management (97), Econometrics (94), Portfolio & Investment (94), Intermediate Microeconomics (94), Intermediate Accounting (100), Urban Economics (95), Intermediate Macroeconomics (93), Dissertation (A^+), Purchase (98), etc.

ACADEMIC EXPERIENCE

Research assistant Princeton, US
Advisor: Prof. John M. Mulvey, ORFE, Princeton University *Fall 2018*

- to be filled;
- to be filled.

Research assistant Evanston, US
Advisor: Prof. Han Liu, Department of Statistics, Northwestern University *Summer 2018*

- to be filled;
- to be filled.

Hyers-Ulam stability of operator equations in quasi-Banach algebras Guangzhou, China
Undergraduate Dissertation in Mathematics · Advisor: Prof. Yongjin Li *Spring 2018*

- Discussed and proved the Hyers-Ulam stability of two types of operator equations in quasi-Banach algebras, by constructing contraction mappings and using fixed-point theorems;
- The paper has been accepted by *Appl. Math. E-Notes*, and will be published in Volume 18.

Time-varying and nonlinear features of volume-price correlation Guangzhou, China
Undergraduate Dissertation in Finance · Advisor: Prof. Fengping Tian *Spring 2017*

- Studied the measurement of underlying nonlinear correlation and dynamic patterns in price-volume dependence structure, among listed companies of different market capitalization rates;
- Established mixed Copula models to analyze the nonlinear correlation at tails, incorporated TVP-VAR model to analyze the time-varying coefficients, used kernel functions to estimate the marginal distributions, introduced SCAD penalty and used EM algorithm to estimate the parameters;
- Results and financial interpretation: the one-way effect from price to volume dominates the volume-price interaction, and the volume-price dependence structure is characterized by an asymmetric pattern with high correlation at upper tail, including both positive and negative dependence;

· Honored as outstanding undergraduate dissertation (top 1%).

Forest cover type prediction using extremely randomized trees Guangzhou, China
Project in Modern Multivariate Statistics · Advisor: Prof. Xueqin Wang *Apr. 2017*

· It was a supervised multi-class classification problem with categorical predictors, given unbalanced data;
· Conducted feature engineering, and established a strong classifier by integrating stratified classifiers;
· Introduced extremely randomized trees to reduce variance and avoid overfitting; In the setting of unbalanced data, this method outperformed traditional random forest, and the results ranked 2% in Kaggle.

Teaching assistant for undergraduate real analysis Guangzhou, China
Prof. Yongjin Li, School of Mathematics, Sun Yat-sen University *Fall 2016*

· Sorted out handouts, held office hours, answered questions, and rated homework paper.
· Helped correcting and polishing lecture notes. Found out more than 100 errors and typos in the original edition.

A dynamic approach to optimizing educational investment strategy Guangzhou, China
Research Project · Advisor: Dr. Xiaolong Jiang *Feb. 2016*

· Developed indicators tailored for educational investment from high complexity of data, and proposed a dynamic model to determine the optimal long-term investment strategy;
· Employed simulated annealing and trained back propagation artificial neural network to predict parameters, and the results were robust and reliable.

Teaching assistant for undergraduate linear algebra Zhuhai, China
Prof. Jiajun Zhang, International School of Business and Finance, Sun Yat-sen University *Fall 2015*

· Sorted out handouts, held office hours, answered questions, and rated homework paper.

HONORS & AWARDS

National Scholarship (top 1%), Ministry of Education, P.R. China (No. 201614568)	*Dec. 2016*
Outstanding Undergraduate Dissertation (top 1%), Sun Yat-sen University	*May 2017*
First Prize of Merit Scholarship (top 1%), Sun Yat-sen University	*Nov. 2016*
Meritorious Winner of Mathematical Contest in Modeling, COMAP, U.S.	*Feb. 2016*
First Prize in National Mathematical Competition, Guangdong Division	*Dec. 2015*
First Prize in National Contest of Market Research and Analysis, Guangdong Division	*Apr. 2016*
Outstanding Leaders of Student Associations, Sun Yat-sen University	*May 2016*
Second Prize in National High School Contest in Chemistry	*Dec. 2012*

OTHER EXPERIENCE

Bank of China, Guangzhou Division Guangzhou, China
Quantitative Research Intern, as part of professional internship *Summer 2016*

· Aggregated data from databases to administer financial aid and identify trends;
· Developed methods for risk attribution in simulated portfolio risk using factor models;
· Implemented a pricing model for credit default swaps from the literature; Quantified historical movements in credit default swaps to measure the potential risk incurred by the proprietary trading desk.

Jingdong Cooperation, Southeast Division Guangzhou, China
Analyst Intern, as part of professional internship *Summer 2015*

· Analyzed large data sets of customer information using statistical methods with R and SPSS;

- Sorted out and compiled and daily sales data from collaborators, and polished analytical skills.

Pyramid Society, Sun Yat-sen University Zhuhai, China
Minister of Organization Department *Sept. 2014 - May 2016*

- Organized over 20 academic activities, enriching cultural and spiritual atmosphere on campus; invited scholars to deliver speeches, applied for rooms for these activities, and managed human resources;
- Honored as outstanding leader of student organizations at Sun Yat-sen University.

MISCELLANEOUS

Research Interests	Statistical Learning, High-dimensional Statistics, Stochastic Optimization, etc.
Computer Skills	R, C^{++}, Python, MATLAB, LaTeX, Office (Word, Excel and Powerpoint).
Languages	English, Mandarin Chinese (native), Hakka (native), Cantonese.