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EDUCATION

- **National University of Singapore, Singapore** August 2019 – January 2021
 - M.Sc in Statistics, 4.61/5.00
 - Advanced Topics in Applied Statistics, Statistical Analysis of Networks, Applied Data Mining
- **Nanjing Audit University, China** September 2015 – June 2019
 - B.Sc in Economics with Honours(Finance, CFA direction), 89.72, 3/103
 - Quantitative Methods, Corporate and Behavioral Finance, Economics and Econometrics, Derivatives
- **University of California, Los Angeles, USA** July 2017 – August 2017
 - Excellent, academic credit earned
 - International Business and Leadership Management Program

RESEARCH INTERESTS

- Data Privacy and Fairness, Network Science, Causal Discovery, Machine Learning, Social Data Science

PUBLICATIONS

- Song.Y.& Wang.T.(2021). *Continuous Release of Triangles on Directed Graph Streams Under Differential Privacy*.(In preparation, will upload codes and the preprint paper on GitHub)
- Song.Z., Li.W., Jin.X., Ying.J., Zhang.X., Song.Y., Li.H. & Fan.Q.(2021). *Genetics, Leadership, and Well-Being: An Investigation with a Large-Scale GWAS*. (Submitted to the Proceedings of the National Academy of Sciences of the United States of America(PNAS), Under the second review)
- Ng.J., Hubner.S., Teow.J., Song.Y., Wang.Y., Kaur.A., Frese.M., Song.Z., Lee.L. & Moriguchi.T.(2021). *Development of cultural inventory on Asian countries and exploratory approach to predict innovation*. In the 81st Annual Meeting of the Academy of Management(AOM)

RESEARCH EXPERIENCE

- **Collaboration** June 2021 – Current
With Prof. Tianhao Wang CS Department, University of Virginia
 - Based on the edge-based wedge sampling and random paring, proposed an accurate and efficient approximate **global triangle counting algorithm on directed graph streams** in Python, which could support range queries of triangle change and triangle counting queries with batch updates. Have performed the basic theoretical analysis.
 - Designed the continuous release algorithm of triangle relevant queries under **differential privacy**.
 - By now, drafted related work, preliminaries and algorithm design sections in our prepared preprint paper.
- **Research Assistant** June 2020 – January 2021
Supervised by Prof. Zhaoli Song NUS Business School
 - Joined the *Enhancing Productivity of Innovations across Cultures for Singapore(EPICS)* project.
 - Cleansed a survey dataset with 667 variables, designed a system to identify scaled innovation and specific product and service items by random forest with 95% AUC; visualized the overall dataset and identified items, selected variables to recognize 64 corresponding items to do EFA, CFA, SEM and further post-analysis for understanding cross-cultural differences among 5 Asian countries, and generated reports automatically.
 - Drafted method and analysis-relevant sections of an **accepted** paper to **AOM**.
- **Research Assistant** June 2020 – January 2021
Supervised by Prof. Qiao Fan & Prof. Zhaoli Song Duke-NUS Medical School & NUS Business School
 - Joined the *Genome-wide Association Studies* project, cleansed and analyzed data from UK-Biobank among 500,000 participants and 19 million genetic variants.
 - Developed a system to run GWAS on NSCC server based on 22 pairs of autosomes and 119 behavioral and leadership phenotype variables with the overall, female and male samples respectively; drew the 357 Manhattan plots and QQ plots; identified top variants; calculated lambda, genetic correlation and heritability etc in Linux Shell and R, and generated reports and outputs automatically.
 - Applied other advanced GWAS approaches in the state-of-art papers to fit the pre-processed dataset.

- **University Excellent Graduation Thesis** 2019
Supervised by Prof. Guangying Liu
- *Short Text Sentiment Analysis Based on Text Feature Semantic Segmentation and Word Embedding Models*
Key words: Deep Learning, Statistical Learning, TFIDF, Trigram, Word2vec, Doc2vec
- **Contest Paper** Meritorious Winner, MCM/ICM, 2018
- *Pacing on the Path of Danger - Where is our Utopia?*
Key Words: PSR, Lotka-Volterra Model, EGARCH-GPD, Fragility Measure, Environment Risk Regulation
- **Computer Software Copyright**
- H.Y.Ren, Y.Song, K.Y.Wu, J.X.Li. (2018). **Intelligent Vehicle Lock Control System Based on Face Recognition V1.0**, National Copyright Administration of the P.R.China: 2018SR564936.
- **Strategies for Quantitative Investments**
- *Big Cap Graham Strategy* - the accumulated return between 1/1/2009 and 1/1/2018 was 395.456%.
- *Small Cap Stop - loss Strategy* - the accumulated return between 1/1/2009 and 1/1/2018 was 1176.548%.

WORKING EXPERIENCE

- **Teaching Assistant/Grader** July 2020 – January 2021
Mathematics, Computational and Statistical Sciences Yale-NUS College
- Graded R programming assignments and data science problem sets for *YSC2239- Introduction to Data Science* taught by Alexandros Beskos.
- Topics covered statistical inference, machine learning, data visualization and big data analytics.
- **Data Scientist Intern** May 2018 – August 2018
Fin-Tech Research Center, Suning Institute of Finance Suning HQ, China
- Developed a real-time parameter monitoring system to detect and record anomalies and deviations, and evaluate performance of 15 online and offline risk management models over 18 months based on 30 million customer data.
- Wrote a research report on the device faker tools and device environment faker tools for the network monitoring system of the Dark Industry. Constructed a public opinion index to gauge the popularity of Regtech in China.
- Researched the Tech-giants' risk management services and products, wrote 6 reports on Dual Recording System, Face Recognition, Collection Robot, and Marketing Risk Management Solutions, etc.
- Retrieved and cleansed customer default data using SQL. Mined customer deviance behavior data with Cypher in the risk management knowledge map, identified over 3000 pieces of records.
- **Investment Research Analyst Intern** October 2017 – January 2018
Department of Investment Research, Xinhua Fengyu Capital Management CO.,LTD China
- Constructed an analytical framework of Private Equity using an AHP model, established 3 financial models to assist investment decisions. Collected, analyzed, and visualized the industrial data.
- Wrote 4 inner investment reports on the projects to be invested, and proposed referenced investment suggestions.

HONOURS and AWARDS

- **Outstanding Graduates with Honours**, Nanjing Audit University, 2019
- **National Scholarship**, Ministry of Education of the People's Republic of China, 2018
- **President Scholarship**, Nanjing Audit University, 2018
- **First-Class Scholarship**, Nanjing Audit University, 2018
- **Merit Student**, Nanjing Audit University, 2018
- **Meritorious Winner of the Interdisciplinary Contest in Modeling(MCM/ICM)**, COMAP, USA, 2018
- **Second Prize of the Eastern Area of China in the First China (Hengqin) International University Quantitative Finance Competition**, International, 2018
- **Jiangsu Provincial Government Scholarship Program of Overseas Studies**, JESIE, 2017
- **First Academic Prize**, Nanjing Audit University, 2016

SKILLS Python, R, SQL, Linux Shell, LaTeX

CERTIFICATION

- IBM Data Science Professional Certificate, powered by Coursera, 2019
- FRM Exam Part I and Part II(Pass All, Nov.2017)