CHENYIN GAO

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EDUCATION

North Carolina State University (NC State) Raleigh, NC
Ph.D. in Statistics Expected May 2024
- GPA: 4.0/4.0
- Research interests: causal inference and missing data imputation (supervised by Dr. Shu Yang)

Sun Yat-sen University (SYSU) Guangzhou, China
B.Sc. in Statistics, Minor in Finance June 2019
- GPA: 3.8/4.0
- Selected awards: China National Scholarship (Awarded for outstanding full-time undergraduates); 1st Merit Scholarship (2/72); 1st Prize, China Undergraduate Mathematical Contest in Modeling, CSIAM

RESEARCH EXPERIENCE

Department of Statistics, North Carolina State University Raleigh, NC
Research Project, supervised by Dr. Shu Yang Sep. 2020- Present
- Developed a inferential framework in a data-driven manner to integrate probability (PR) sample with non-probability (NPR) sample by introducing a pre-testing procedure
- Investigated the asymptotics for ratio-matching imputation with incomplete multinomial outcome
- Identified average causal effect (ATE) under cluster-specific non-ignorability via relaxed propensity score calibration

Department of Biostatistics & Bioinformatics, Duke University Durham, NC
Research Intern, supervised by Dr. Anru Zhang May 2021- Aug. 2021
- Developed a deep learning-based denoising framework via low-rank tensor approximated convolutional neural network (CNN) to boost model generalization ability
- Extensive experiments both on synthetic noisy images and real-world micrographs have demonstrated the improvement compared with various learning-based and non-learning-based methods

Southern China Center for Statistical Science (SC2S2) Guangzhou, China
Research Assistant, Quantitative Trading Department Dec. 2017- June 2019
- Conducted and back-tested arbitrage strategies including cointegrative arbitrage and hidden Markov model in Python
- Modeled the depth of Limit Order Book (LOB) in both sides to obtain intraday mean-reversion margin using B-spline regression and back-testing the strategies with real data (2016-2018)

National Natural Science Foundation of China (NSFC) Program Guangzhou, China
Research Assistant, Risk Contagion and Network Analysis Oct. 2017– Sep. 2018
- Developed Bayesian Gibbs samplers for evaluating mixed frequency vector autoregression (mixed-VAR) models
- Applied lasso-quantile regressions within the GARCH model to capture the paired time-varying tail-risk behavior

WORK EXPERIENCE

Department of Statistics, North Carolina State University Raleigh, NC
Teaching Assistant Aug. 2020- Present
- Assisted in one undergraduate-level course and two graduate-level courses about statistical methods and applications
- Helped students with basic programming in Matlab and R

GF Securities Co., Ltd. Guangzhou, China
Big Data Engineer Intern, IT Dept. Mar. 2019 – June 2019
- Attributed strategic profits based on Barra and Fama risk factors analysis and collaborate coding with Git
- Optimized ETF net position weekly by constraint nonlinear optimization factored in risk control (VaR and CVaR) featuring lightGBM and XGBoost model

Deloitte Enterprise Consulting (Shanghai) Co., Ltd. Guangzhou, China
Data Analyst, Risk Advisory (RA), FSI Nov. 2017 – Feb. 2018
- Participated in the overall risk management framework and engaged scenario analysis
- Helped to enhance model robustness and present part of the stress test result in the end

TECHNICAL REPORTS

1. **C. Gao*** and S. Yang. Pretest estimation in combining probability and non-probability samples, *JASA*, revision
2. **C. Gao***, K. J. Thompson, S. Yang and J. K. Kim. Nearest neighbor ratio imputation with incomplete multinomial outcome in survey sampling, *JRSSA*, revision

SELECTED AWARDS AND HONORS

- Excellent Undergraduate Dissertation, Sun Yat-sen University
- China National Scholarship, China (Awarded for outstanding full-time undergraduates)
- 1st Merit Scholarship, School of Mathematics, Sun Yat-sen University (2/72)
- 1st Prize, China Undergraduate Mathematical Contest in Modeling, CSIAM

PRESENTATION

- Gao, C., P. Acharya, A. Zhang, CNN-based Single Cryo-EM Images Unsupervised Denoisers. Impact Talk presented at: *17th Annual Duke Center for AIDS Research Virtual Fall Scientific Retreat*; Oct. 27, 2021; Durham, NC (virtual).

ACTIVITIES

Global Financial Analysis Guangzhou, China

Leader, International Finance Elite Program, Investment Services July 2017 – Aug. 2017

- Collected raw data using web crawler and visualized effective factors after necessary data clearing and organization
- Made an analysis investment report on the development of the Great Wall Automobile and demonstrated its expected return and modified duration in the final presentation

SKILLS

- **Computer Skills:** R, SAS, Python, PyTorch, SQL
- **Language:** Chinese (native), English