

# CHENYIN GAO

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## EDUCATION

<b>PhD Statistics, North Carolina State University (NCSU)</b>	2019 - 2024
<ul style="list-style-type: none"><li>GPA: 4.0/4.0</li><li>Research interests: causal inference and data integration (advised by Dr. Shu Yang)</li></ul>	
<b>BS Statistics, Sun Yat-sen University (SYSU)</b>	2015 - 2019
<ul style="list-style-type: none"><li>GPA: 3.8/4.0</li><li>Minor in Finance, China National Scholarship (Awarded for outstanding full-time undergraduates)</li></ul>	

## RESEARCH EXPERIENCE

<b>Department of Statistics, North Carolina State University</b>	Raleigh, NC
Research Project, supervised by Dr. Shu Yang	Sep. 2020 - Present
<ul style="list-style-type: none"><li>Developed an inferential framework in a data-driven manner to integrate probability (PR) sample with non-probability (NPR) sample by introducing a pre-testing procedure</li><li>Investigated the asymptotics for ratio-matching imputation with incomplete multinomial outcome</li><li>Identified average causal effect (ATE) under cluster-specific non-ignorability via relaxed propensity score calibration</li></ul>	
<b>Department of Biostatistics &amp; Bioinformatics, Duke University</b>	Durham, NC
Research Intern, supervised by Dr. Anru Zhang	May 2021 - Aug. 2021
<ul style="list-style-type: none"><li>Developed a deep learning-based denoising framework via low-rank tensor approximated convolutional neural network (CNN) to boost model generalization ability</li><li>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</li></ul>	
<b>Southern China Center for Statistical Science (SC2S2)</b>	Guangzhou, China
Research Assistant, Quantitative Trading Department	Dec. 2017- June 2019
<ul style="list-style-type: none"><li>Conducted and back-tested arbitrage strategies including cointegrative arbitrage and hidden Markov model in Python</li><li>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)</li></ul>	
<b>National Natural Science Foundation of China (NSFC) Program</b>	Guangzhou, China
Research Assistant, Risk Contagion and Network Analysis	Oct. 2017 - Sep. 2018
<ul style="list-style-type: none"><li>Developed Bayesian Gibbs samplers for evaluating mixed frequency vector autoregression (mixed-VAR) models</li><li>Applied lasso-quantile regressions within the GARCH model to capture the paired time-varying tail-risk behavior</li></ul>	

## WORK EXPERIENCE

<b>Department of Statistics, North Carolina State University</b>	Raleigh, NC
Teaching Assistant	Aug. 2020 - Present
<ul style="list-style-type: none"><li>Assisted in one undergraduate-level course and two graduate-level courses about statistical methods and applications</li><li>Helped students with basic programming in Matlab and R</li></ul>	
<b>GF Securities Co., Ltd.</b>	Guangzhou, China
Big Data Engineer Intern, IT Dept.	Mar. 2019 - June 2019
<ul style="list-style-type: none"><li>Attributed strategic profits based on Barra and Fama risk factors analysis and collaborate coding with Git</li><li>Optimized ETF net position weekly by constraint nonlinear optimization factored in risk control (VaR and CVaR) featuring lightGBM and XGBoost model</li></ul>	
<b>Deloitte Enterprise Consulting (Shanghai) Co., Ltd.</b>	Guangzhou, China
Data Analyst, Risk Advisory (RA), FSI	Nov. 2017 - Feb. 2018
<ul style="list-style-type: none"><li>Participated in the overall risk management framework and engaged scenario analysis</li><li>Helped to enhance model robustness and present part of the stress test result in the end</li></ul>	

## PUBLICATIONS

- C. Gao\*** and S. Yang (2021+). Pretest estimation in combining probability and non-probability samples. In revision
- C. Gao\***, K. J. Thompson, S. Yang and J. K. Kim (2021+). Nearest neighbor ratio imputation with incomplete multinomial outcome in survey sampling. In revision
- Q Xie\*, T. Du, M. Zhao, **C. Gao**, Q. Lyu, L. Suo, Y. Kuang (2021). Advanced trophectoderm quality increases the risk of a large for gestational age baby in single frozen-thawed blastocyst transfer cycles, *Human Reproduction*, **36**, 2111-2120

## SELECTED AWARDS AND HONORS

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- Mu Sigma Rho, National Statistics Honor Society, NCSU, 2021 - present
- Excellent Undergraduate Dissertation, SYSU
- China National Scholarship, China (Awarded for outstanding full-time undergraduates)
- 1<sup>st</sup> Merit Scholarship, School of Mathematics, SYSU (2/72)
- 1<sup>st</sup> Prize, China Undergraduate Mathematical Contest in Modeling, CSIAM

## PRESENTATION

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- 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 AND SERVICES

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### Review Services

The 25th International Conference on Artificial Intelligence and Statistics (AISTATS)

2021

### 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

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