

# Changhao Ge

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CONTACT INFORMATION	School of Arts & Sciences University of Pennsylvania 207 Blockley Hall Philadelphia, PA 19104, US	<a href="mailto:gech@sas.upenn.edu">gech@sas.upenn.edu</a> <a href="https://github.com/HowardGech">github.com/HowardGech</a> (267)283-5555
EDUCATION	<b>Ph.D.</b> , Applied Mathematics & Computational Science <i>University of Pennsylvania</i>	<b>2022 - 2027 (Expected)</b> GPA: 4.0/4.0
	<b>B.Sc.</b> , Statistics <i>University of Science and Technology of China</i>	<b>2018 - 2022</b> Rank: 1/92, GPA: 3.95/4.3
RESEARCH INTEREST	<ul style="list-style-type: none"><li>• <b>Statistics and Machine Learning</b> including but not limited to Bayesian analysis, variable selection, variational inference and deep learning, and efficient implementations of their algorithms.</li><li>• <b>Data-driven Applications</b> of prediction or statistical inference with small signal-to-noise ratio, high-dimensional or multi-source data, including quantitative finance, mobile health records and multi-omics biomedical research.</li></ul>	
PUBLICATION	<b>Under Review</b> <ul style="list-style-type: none"><li>• <b>Ge, C.</b>, Hu, X., Lin, Z., Li, H. (2024). "RCANE: A Deep Learning Algorithm for Whole-genome Pan-Cancer Somatic Copy Number Aberration Prediction using RNA-seq Data." <i>bioRxiv:2024.11.03.621681</i>.<a href="#">[repo]</a><a href="#">[PDF]</a></li><li>• <b>Ge, C.</b> and Li, H. (2024). "Simultaneous Estimation of Many Sparse Networks via Hierarchical Poisson Log-Normal Model." <i>arXiv:2409.12275</i>.<a href="#">[repo]</a><a href="#">[PDF]</a></li><li>• Lin, B. *, <b>Ge, C. *</b>, and Liu, J. S. (2023). "A Variational Spike-and-Slab approach for group variable selection." <i>arXiv:2309.16855</i>.<a href="#">[repo]</a><a href="#">[PDF]</a></li></ul>	
ONGOING RESEARCH	<ul style="list-style-type: none"><li>• DAG Learning using single-cell RNA Perturbation data with (Linear) Structural Equation.</li></ul>	
EXPERIENCE	<b>Graduate Research Assistant</b> , <i>Perelman School of Medicine</i> Advisor: Hongzhe Lee Responsible for collecting data from multiple sources, data processing, and developing novel methods for analyzing noisy biomedical data, with a focus on scRNA data and other high-dimensional omics data.	Spring 2024 - Present
	<b>Graduate Teaching Assistant</b> , <i>University of Pennsylvania</i> Course: Advanced Calculus Instructor: John Green	Fall 2023
	<b>Undergraduate Teaching Assistant</b> , <i>USTC</i> Course: Probability and Mathematical Statistics Instructor: Hong Zhang	Fall 2021
	<b>Undergraduate Research Assistant (remote)</b> , <i>Harvard University</i> Advisor: Jun S. Liu Developed a Bayesian variational inference method for group variable selection with general Spike-and-Slab priors. Generalized it with Pólya-Gamma augmentation and smooth splines. Analyzed multiple methods with NIR Spectroscopy data.	Fall 2020

AWARDS	Benjamin Franklin Fellowship, <i>University of Pennsylvania</i> .	2022 - Present
	National Undergraduate Scholarship, <i>Ministry of Education, China</i> .	2022
	The Chinese Mathematics Competitions, First Prize in Anhui Province. <i>Chinese Mathematical Society</i>	2021
	Outstanding Student Scholarship, Silver Award, <i>USTC</i> .	2019, 2020

SKILLS	R/Rcpp, C/C++, Python/Cython, PyTorch, TensorFlow
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