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November 13, 2025

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To the Faculty Search Committee,

I am writing to apply for the tenure-track assistant professor position in the Department of Statistics and Data Science at *Tsinghua University*. x

- number of publication and quality
- advisors and wide collaborator
- successful mentoring experience
- deep and move fast in research
- emerging challenges from LLM and AI

I am writing to express my strong interest in the tenure-track faculty position in *Tsinghua University*. I am currently a Postdoctoral Research Fellow in the Department of Biostatistics at the University of Michigan, working under the supervision of Dr. Peter Song. I earned my Ph.D. in Statistics from Renmin University of China in July 2023, where I was advised by Dr. Liping Zhu.

My research focuses on distributed and large-scale statistical learning, mediation pathway analysis, and synthetic data integration—areas that address fundamental challenges in modern data science, including scalability, efficiency, and inference under complex dependence structures. During my doctoral studies, I developed distributed statistical methods for large-scale data analysis with applications in compressive sensing, robust estimation, and classification. This work has appeared in leading journals such as the *Journal of the American Statistical Association* and the *Journal of Computational and Graphical Statistics*.

In my postdoctoral research, I have expanded my focus to mediation analysis, developing new testing strategies for composite null hypotheses that achieve valid type I error control

and high power. These methods have been applied to study the effects of environmental exposures on health outcomes such as biological aging acceleration and childhood obesity. Currently, in collaboration with Dr. Song, I am exploring how synthetic data integration can enhance inference efficiency and false discovery control under general dependence structures. Our ongoing work in this area is under review at *Biometrika* and other journals.

Looking ahead, my research vision is to develop a unified framework for distributed and synthetic-data-based inference that integrates high-dimensional modeling, causal mediation, and privacy-preserving computation. I aim to establish broad interdisciplinary collaborations in health and biomedical data science, leveraging scalable and interpretable methods to translate complex data into actionable insights.

In addition to my research, I am deeply committed to teaching and mentoring. During my graduate training, I have served as a teaching assistant for multiple statistics and data analysis courses and have mentored graduate students and interns on methodological research projects. I believe in cultivating students' statistical intuition through hands-on data exploration, critical reasoning about model assumptions, and appreciation of uncertainty quantification. I would be excited to contribute to the department's teaching mission by offering both foundational and advanced courses in statistical learning, inference, and data science.

I am particularly attracted to Florida State University's strong emphasis on methodological innovation and interdisciplinary collaboration. The department's expertise in high-dimensional statistics, statistical computing, and applied data science strongly resonates with my own research direction. I am especially interested in the possibility of collaborating with faculty members whose work intersects distributed inference, Bayesian computation, and causal modeling. I am eager to contribute to the department's growth through collaborative research, graduate mentoring, and active engagement in the academic community.

Please find my curriculum vitae and the contact information for three references attached. I would be honored to discuss how my research, teaching philosophy, and future plans align with the goals of the Department of Statistics at Florida State University. Thank you very much for your consideration, and I look forward to the opportunity to contribute to your distinguished department.

Warm regards,

*Canyi Chen*

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