Archer Gong Zhang

(Last updated: June 2, 2025)

CONTACT INFORMATION

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EMPLOYMENT

2023 – Present   Departmental Postdoctoral Fellow
Department of Statistical Sciences, University of Toronto, Toronto, ON, Canada
Independent research position with a teaching load of one full-time course per year

2022 – 2023   Postdoctoral Fellow
Department of Statistical Sciences, University of Toronto, Toronto, ON, Canada
Supervisors: Dr. Nancy Reid and Dr. Qiang Sun

EDUCATION

2016 – 2022   Ph.D. in Statistics
University of British Columbia (UBC), Vancouver, BC, Canada
Thesis title: "Semiparametric Inferences under a Density Ratio Model"
Supervisor: Dr. Jiahua Chen

2013 – 2016   Honours Bachelor of Science (with high distinction)
University of Toronto, Toronto, ON, Canada
Specialist in Statistical Science and Minor in Mathematics
CUMULATIVE GPA: 3.88/4.00

2012 – 2013   **Simon Fraser University (SFU)**, Burnaby, BC, Canada
(Major in Statistics; Transferred to University of Toronto)
CUMULATIVE GPA: 3.99/4.33

PUBLICATIONS AND PREPRINTS

* indicates equal contribution, with authors listed in alphabetical order.

- **Archer Gong Zhang**, Nancy Reid, and Qiang Sun. "A Semiparametric Approach to Data-Integrated Causal Inference." *Manuscript in preparation; poster available here and slides available here.*

- **Archer Gong Zhang**, Nancy Reid, and Qiang Sun. "A Semiparametric Approach to Causal Inference." *arXiv preprint arXiv:2411.00950, 2024. In revision; available here.*

- **Archer Gong Zhang** and Jiahua Chen. "Optimal Estimation under a Semiparametric Density Ratio Model." *arXiv preprint arXiv:2309.09103, 2023. In revision; available here.*

- Yicheng Zeng*, **Archer Gong Zhang***, Hengchao Chen, and Qiang Sun. "Multidimensional scaling with noisy data." *Submitted; invited by Wiley Interdisciplinary Reviews: Computational Statistics.*

- Qiang Sun, **Archer Gong Zhang**, Chenyu Liu, and Kean Ming Tan. "Resistant convex clustering: How does the fusion penalty enhance resistance?" *Electronic Journal of Statistics*, 19(1), 1199–1230, 2025. https://doi.org/10.1214/25-EJS2359.

- Qiong Zhang, **Archer Gong Zhang**, and Jiahua Chen. "Gaussian Mixture Reduction with Composite Transportation Divergence." *IEEE Transactions on Information Theory*, 70(7):5191–5212, 2024. https://doi.org/10.1109/TIT.2023.3323346.

- **Archer Gong Zhang** and Jiahua Chen. "Density ratio model with data-adaptive basis function." *Journal of Multivariate Analysis*, 191:105043, 2022. https://doi.org/10.1016/j.jmva.2022.105043.

- **Archer Gong Zhang**, Guangyu Zhu, and Jiahua Chen. "Empirical likelihood ratio test on quantiles under a density ratio model." *Electronic Journal of Statistics*, 15(2), 6191–6227, 2021. https://doi.org/10.1214/21-EJS1943.

AWARDS AND SCHOLARSHIPS

2021	General Student Research Presentation Award at Statistical Society of Canada Annual Meeting
2021	Statistical Society of Canada Annual Meeting Student Grant
2020/2021	Department of Statistics Graduate Teaching Assistant Award (Nominated for the UBC Killam Graduate Teaching Assistant Award)
2020 – 2021	President's Academic Excellence Initiative Ph.D. Award
2017 – 2021	Four Year Doctoral Fellowship
2016 – 2021	International Tuition Award
2016 – 2020	Faculty of Science Ph.D. Tuition Award
2016 – 2020	Faculty of Science Graduate Award
2016	Anona Thorne and Takao Tanabe Graduate Entrance Scholarship in Statistics
2015	University of Toronto Excellence Award in the Natural Sciences and Engineering
2015	University of Toronto Innis College Exceptional Achievement Award
2013	SFU Vice-President Research-Undergraduate Student Research Award
2013	SFU Undergraduate Open Scholarship
2012	SFU Alumni Scholarship Fund

TEACHING AND MENTORING

Undergraduate Research Assistants at University of Toronto

Amanda Ng and Shangkai Zhu, 2024 Summer (with Dr. Nancy Reid), Aspects of robust regression analysis
Amanda Ng, 2025 Summer (with Dr. Nancy Reid), Robust high-dimensional regression with t-errors

Course Instructor at University of Toronto

2024/09 – 2024/12	STA237H1	Probability, Statistics and Data Analysis I
2023/09 – 2023/12	STA237H1	Probability, Statistics and Data Analysis I

Sessional Lecturer at University of British Columbia

2020/01 – 2020/04	STAT 302	Introduction to Probability

Teaching Assistant at University of Toronto

2023/01 – 2023/04	STAD80H3	Analysis of Big Data

Teaching Assistant at University of British Columbia

2021/09 – 2021/12	STAT 302	Introduction to Probability
2021/01 – 2021/04	STAT 302	Introduction to Probability
2020/09 – 2020/12	STAT 203	Statistical Methods
2019/01 – 2019/04	STAT 302	Introduction to Probability
2018/09 – 2018/12	STAT 306	Finding Relationships in Data
2018/01 – 2018/04	STAT 461/561	Statistical Theory II
2017/09 – 2017/12	STAT 460/560	Statistical Theory I
2017/01 – 2017/04	STAT 302	Introduction to Probability
2016/09 – 2016/12	STAT 302	Introduction to Probability

PROFESSIONAL SERVICE

Referee for Academic Journal and Conference Papers

Artificial Intelligence and Statistics (AISTATS), Communications in Statistics - Simulation and Computation, Journal of Nonparametric Statistics, Mathematical Population Studies, The Canadian Journal of Statistics, Uncertainty in Artificial Intelligence (UAI).

Professional Experience

2014/08 – 2014/09   Summer Intern at **AIA China–Life Insurance–AIA Group Limited (Shanghai, China)**
Department: Marketing and Product Design Department
Used the programming language SQL to manage the company's database of profiles of policy holders and life assurance policies.

Professional Affiliations and Activities

Present   Member of the **Statistical Society of Canada** and the **American Statistical Association**

2023 – Present   Organizer of the Brown Bag Seminar at the **Department of Statistical Sciences**

Summer 2020   Team leader in a project to support **UBC Department of Statistics**'s move to online teaching
Roles of the team: preparing teaching materials including lab materials and questions for the in-class activities and quizzes, and meeting with the course instructors and our supervisors.

2018 – 2019   Graduate student liaison to the search for assistant professor in biostatistics at **UBC Department of Statistics**
Roles: leading the discussion of graduate students with the candidates, collecting graduate students' opinions, and reporting back to the Search Committee.

2017 – 2019   Organizer of the graduate student seminars at **UBC Department of Statistics**

2017/08   Volunteer at **International Chinese Statistical Association-Canada Chapter Symposium**

2014/05   Volunteer at **Statistical Society of Canada (SSC) Annual Meeting**

Presentations

2024/11   Invited presentation at **Department of Statistical Sciences Postdoctoral Day**
Title: "A Semiparametric Approach to Data-Integrated Causal Inference". *Slides here.*

2024/08   Invited poster at **Joint Statistical Meetings (JSM)**
Title: "A Semiparametric Approach to Data-Integrated Causal Inference". *Poster here.*

2024/06   Contributed talk at **Statistical Society of Canada (SSC) Annual Meeting**
Title: "A Semiparametric Approach to Data-Integrated Causal Inference". *Slides here.*

2023/08   Contributed talk at **Joint Statistical Meetings (JSM)**
Title: "Estimation Efficiency under A Semiparametric Density Ratio Model". *Slides here.*

2022/12   Invited presentation at **Department of Statistical Sciences Postdoctoral Day**
Title: "Density ratio model with data-adaptive basis function". *Slides here.*

2022/11   Presentation at **Reading Group on Learning**
Title: "An Overview of Transfer Learning – with an emphasis on domain adaptation". *Slides here.*

2022/06   Contributed talk at **Statistical Society of Canada (SSC) Annual Meeting**
Title: "Estimation Efficiency under a Two-Sample Density Ratio Model". *Slides here.*

2022/05   Invited seminar talk (online) at **Department of Management Sciences, City University of Hong Kong**
Title: "Semiparametric Inferences under a Density Ratio Model".

2021/11   Lightning talk at **Canadian Statistical Sciences Institute (CANSSI) Showcase**
Title: "Density ratio model with data-adaptive basis function". *Slides here.*

2021/06   Research presentation at **Statistical Society of Canada (SSC) Annual Meeting**
Title: "Empirical Likelihood Ratio Test on Quantiles under a Density Ratio Model". *Slides here.*
Winner of the General Student Research Presentation Award.

2020/08   Contributed talk at **Joint Statistical Meetings (JSM)**
Title: "Learning the Basis Function in a Semiparametric Density Ratio Model". *Slides here.*

2018/12   Research presentation at **SFU-UBC Forest Products Stochastic Modelling Group Annual Meeting at FPInnovations**
Title: "Empirical Likelihood Ratio Test on Quantiles under a Density Ratio Model".

2018/08   Case study poster session at **Joint Statistical Meeting (JSM)**
Joint work with: Ho Yin Ho, Boyi Hu & Yu Wang
Title: "Uncertainty Quantification of Weather Forecasts".

2016/05   Case study poster session at **Statistical Society of Canada (SSC) Annual Meeting**
Joint work with: Tommy Guo, Mufan Li, Harris Quach & Yanbo Tang
Title: "On the Predictive Characteristics for Sustainability of Canadian Charities".