

Yuliang Shi

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EDUCATION

University of Waterloo

09/2021-08/2025

Department of Statistics and Actuarial Science

- **Ph.D. in Biostatistics.** Supervisors: Professor Yeying Zhu and Joel A. Dubin.
- Main interests: causal inference, missing data, variable selection.

Beijing University of Technology

09/2015-07/2019

College of Applied Mathematics and Physics

- Bachelor of Science in Information and Computing Science (Applied Mathematics).

ACADEMIC EXPERIENCES

Department of Statistics and Actuarial Science, University of Waterloo

09/2020-11/2021

Paper: Causal Inference on Missing Exposure via Triple Robust Estimator

First-author. Supervisors: Dr. Yeying Zhu and Joel A. Dubin

- Developed a new IPW and triple robust (TR) estimators to adjust for both missingness and confounding issues using weighted estimating equations (WEE).
- Proposed methods require more flexible condition to protect against misspecification of models.
- Both IPW and TR estimators yielded the smaller bias and the smallest standard errors comparing with traditional DR estimators and imputation-based methods.
- Developed a R package “trme” uploaded on GitHub: <https://github.com/yuliang-shi/trme>

Department of Biostatistics, Princess Margaret Cancer Center

07/2020-11/2020

Project: Survival Analysis on Time to Leukocytosis

Biostatistician, Co-author. Supervisors: Dr. Wei Xu

- Conducted a competing risk model by treating Leukocytosis as main interest and death as competing risk. Estimated cumulative incidence of Leukocytosis at 1, 3 and 5 years respectively.
- Drew a Kaplan-Meier plot for overall survival in the subgroup of patients with Leukocytosis and estimated median survival time with 95% confidence interval.
- Fitted a Cox model on overall survival with time-dependent covariate --Time to Leukocytosis. Published the results in clinical journal, which shows the significant association between death and Leukocytosis.

CONFERENCES

- **Yuliang Shi**, Yeying Zhu, Joel A. Dubin. Causal Inference on Missing Exposure via Robust Estimator, *Joint Statistical Meetings, 2023. Accepted.*
- **Yuliang Shi**, Yeying Zhu, Joel A. Dubin. Variable Selection for Causal Modeling in Missing Exposure

Problems, *Annual Meeting in Statistical Society of Canada*, 2023. **Accepted**. Additionally, present at *International Chinese Statistical Association Meeting*, 2023, **Accepted**.

- **Yuliang Shi**, Yeying Zhu, Joel A. Dubin. Causal Inference on Missing Exposure via Triple Robust Estimator, *Annual Meeting in Statistical Society of Canada*, 2022. **Accepted**.
- **Yuliang Shi**, Yeying Zhu, Joel A. Dubin. Causal Inference on Missing Exposure via Triple Robust Estimator, *Second Waterloo Student Conference in Statistics*, 2021. **Accepted**.

PUBLICATIONS

- **Yuliang Shi**, Yeying Zhu, Joel A. Dubin. Variable Selection for Causal Modeling in Missing Exposure Problems, *Statistics in Medicine*. **Submitted (08/2023)**.
- **Yuliang Shi**, Yeying Zhu, Joel A. Dubin. Causal Inference on Missing Exposure via Robust Estimator, *Biometrical Journal*. **Submitted (05/2023)**. R package “trme”: <https://github.com/yuliang-shi/trme>
- Dawn Maze, Murat O. Arcasoy, Ryan Henrie, Sonia Cerquozzi, Rammurti Kamble, Samer Al-Hadidi, Abdulraheem Yacoub, Anurag K. Singh, Mahmoud Elsayy, Shireen Sirhan, Elliot Smith, Curtis Marcoux, Auro Viswabandya, Andrew Daly, Hassan Sibai, Caroline McNamara, **Yuliang Shi**, Wei Xu, Katherine Lajkosz, Lynda Foltz, Vikas Gupta. Role of Allogeneic Hematopoietic Cell Transplant in Patients with Myelofibrosis in the JAK Inhibitor Era, *The Lancet Haematology*, **Submitted (05/2023)**.
- Madonna R. Peter, Misha Bilenky, **Yuliang Shi**, Jiajie Pu, Shivani Kamdar, Neil E. Fleshner, Anthony M. Joshua, Martin Hirst, Jiajie Pu, Wei Xu, Bharati Bapat. A novel methylated cell-free DNA marker panel to monitor treatment response in metastatic castration resistant prostate cancer, *Epigenomics Journal*, 2022. **Accepted**. <https://doi.org/10.2217/epi-2022-0103>.
- Sumer Shikhare, Indranil Balki, **Yuliang Shi**, John Kavanagh, Laura Donahoe, Wei Xu, Dmitry Rozenberg, Marc de Perrot, Micheal McInnis. Automated right-to-left ventricle ratio calculation for outcome prediction in operated CTEPH, *The Journal of Heart and Lung Transplantation*, 2021. **Accepted**. <https://doi.org/10.1016/j.healun.2021.01.1279>.
- Justin Kierce, **Yuliang Shi**, Hagen Klieb, Nick Blanas, Wei Xu, Marco Magalhaes. Identification of specific clinical risk factors associated with the malignant transformation of oral epithelial dysplasia, *Head & Neck*, 2021. **Accepted**. <https://doi.org/10.1002/hed.26851>
- Radovan Vasic, **Yuliang Shi**, Andrea Arruda, Sarah Malik, Jaime Claudio, Jose-Mario Capo-Chichi, Aniket Bankar, Hassan Sibai, MBBS, Dawn Maze, James Kennedy, Wei Xu, Vikas Gupta. Clinical Significance of Emergent Leukocytosis in Patients with Myelofibrosis Receiving JAK Inhibitor Therapy, *Blood*, *American Society of Hematology*, 2020. **Accepted**. <https://doi.org/10.1182/blood-2020-139936>

SCHOLARSHIPS, PRIZES & HONORS

- International Doctoral Student Awards, University of Waterloo, 2021-2025.
- Statistics and Actuarial Science Chair's Award, University of Waterloo, 2021-2023.
- Biostatistics Training Initiative, Ontario Institute for Cancer Research, 2020-2021.
- Graduate Scholarship, University of Waterloo, 2019-2023.
- Outstanding Student Scholarship, Beijing University of Technology, 2015-2019.

WORK EXPERIENCE

Princess Margaret Cancer Centre, University of Health Network, Toronto

Biostatistics Intern

05/2020-05/2021

Research Analyst I

09/2022-05/2024

- Provided methodology development, statistical analysis and interpretation based on linear model, generalized linear model, survival analysis, causal inference, and longitudinal data analysis.
- Participated into clinical trials design, sample size calculation, study plan and exploratory data analysis.
- Made quality control and Genome-Wide Association Studies on two genetic datasets.
- Conducted 15 projects and submitted 5 research papers to journals collaborating with other principal investigators from fields of radiology, oncology, and hematology.

Department of Statistics and Actuarial Science, University of Waterloo

01/2022-05/2022

Statistical Consultant

- Performed in-depth data analysis for collaborative research during weekly office hour.
- Provided professional suggestions to clients about regressions, hypothesis testing, design of experiments, and survival analysis.
- Contributed to online tutorial for the clients to understand generalized linear model using R.

Department of Statistics and Actuarial Science, University of Waterloo

09/2019-08/2025

Teaching Assistant and Research Assistant

- Worked on 3 projects and assisted on the manuscript as the research assistant for supervisors.
- Primary duties for TA included grading assignments, proctoring exams, holding tutorial and office hours.
- TA Courses: STAT 202 Introductory Statistics for Scientists, STAT 230 Probability, STAT 231 Statistics, STAT 332 Experimental Design, STAT 330 Mathematical Statistics, STAT 331 Linear Model, STAT 371 Applied Linear Models and Process, STAT 436 Statistical Methods for Life History Analysis, STAT 437 Advanced Biostatistics, STAT 830 Experimental Design, STAT 931 Causal Inference.

PERSONAL SKILLS

- Programming Skills: Proficient at R; Skilled on LINUX, Python, and SQL.
- Modeling: Proficient at causal inference, generalized linear model, longitudinal data analysis; Familiar with survival data analysis, statistical learning, and experimental design.
- Language skills: English (Fluent), Chinese (Native).