Yushu Zou

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Education

University of Toronto **Sep. 2022 – Aug. 2024 (Expected)**
Master of Science in Biostatistics *Toronto, Canada*

Supervisor: Dr. Kuan Liu
Thesis: An bayesian approach for sensitivity analysis in longitudinal data

University of Toronto Scarborough **Sep. 2018 – May 2022**
Honour Bachelor of Science in Statistics *Toronto, Canada*

- Dean's List 2019 - 2022
- University of Toronto Scholar 2018

Professional Experience

Public Health Ontario **Oct. 2022 – Present**
Practicum Student | Supervised by Dr. Lennon Li and Dr. Venkata Duvvuri *Toronto, Canada*

- Applied a comprehensive suite of statistical models and machine learning algorithms in **Python** to forecast COVID-19 case trends in Ontario, leveraging data analytics to inform public health strategies.
- Designed and tested various predictive models, including regression, time series analysis (e.g., ARIMA), and advanced machine learning techniques (e.g., random forests, XGBoost) to enhance forecast accuracy.
- Collaborated with public health officials to interpret model outputs, providing actionable insights for pandemic response efforts and contributing to the development of targeted, data-driven intervention strategies

The Chow Lab, University Health Network **May 2022 – Present**
Research Assistant| Supervised by Dr. Chung-Wai Chow *Toronto, Canada*

- Spearheading the development and execution of statistical analysis plans for cross-sectional and longitudinal clinical data using **R**
- Managing complex clinical datasets with a focus on data integrity and compliance, employing advanced statistical methods such as regression, hypothesis testing, and correlation analysis to drive research insights
- Authoring detailed analysis reports and contributing to the drafting of manuscripts for peer-reviewed journals, translating complex statistical data into accessible insights
- Delivering oral presentations at meetings, showcasing the ability to convey intricate research findings to diverse audiences, fostering knowledge exchange

Certificates

SAS Certified Advanced Programmer for SAS 9.4 2022
SAS Certified Base Programmer for SAS 9.4 2022

Software

ClickTEST (https://github.com/reidbrok/ClickTEST)

Automates the testing of assumptions for various hypothesis tests, intelligently selecting and executing the appropriate test to yield reliable hypothesis testing or correlation analysis results.

Other Experience

Research Experience

Critical Care Medicine, University Health Network **July 2023 – Present**
Statistical Programmer | Supervised by Dr. Eddy Fan *Toronto, Canada*

University of Toronto Scarborough **May 2022 – Mar. 2023**
Research Assistant| Supervised by Dr. Lisa Jeffery *Toronto, Canada*

- Project: Benefits of working and study remote

University of Toronto Mississauga **May 2022 – Aug. 2022**
Research Assistant| Supervised by Dr. Weiguo Zhang *Toronto, Canada*

- Project: Everyday experience of racial discrimination among Chinese immigrants in Canada

Zhejiang Dongri Limited Company **June 2021 – Aug. 2021**
Data Analyst & Software Programmer *Wenzhou, China*

Ningbo Institution of Materials Technology & Engineer **May 2021 – Aug. 2021**

Data Analyst| Supervised by Dr. Wang Wenfeng *Ningbo, China*

- Project: Predict Covid-19 case using ensemble machine learning model and statistical model

Teaching Experience

University of Toronto, St.George **Sept. 2022 – Present**

Teaching Assistant, STA238: Probability,Statistics and Data Analysis II
Teaching Assistant, STA130: An Introduction to Statistical Reasoning and Data Science
Teaching Assistant, AI4PH Summer Institute

University of Toronto, Scarborough **Sept. 2023 – Present**

Tutor, Math and Stats Support
Teaching Assistant, STAB52: Introduction to Probability
Teaching Assistant, STAC32: Applications of Statistical Methods

Papers

Publication

1. Metko, D., **Zou, Y.**, & Abu-Hilal, M. (2023). "Primary care providers awareness of comorbidities and new advanced therapies for atopic dermatitis A Cross-Sectional Survey from Ontario." *Journal of Cutaneous Medicine and Surgery*, 276, 656-657.

Working Papers

1. Bosch, A., Brunsvig, J.K., Brandao, L., **Zou, Y.**, Vincelli, J., Amiri, N., Avila L., "The mediating role of coagulation factor VIII in the effect of chronic inflammation on recurrent thrombotic events in children with non-central line deep vein thrombosis", *Thrombosis Research* **(Submitted)**
2. **Zou, Y.**, Grunnill, M., Patel, S., Li, L., Duvvuri R. V., "Evaluating Forecasting Techniques for COVID-19 Burden in Ontario: A Time-Series vs. Machine Learning Comparison"
3. Mitani, A.[1†], **Zou, Y.**[†], Leatherdale, T. S., Patte K. A., "Investigating the association between school substance programs and student substance use: accounting for informative cluster size"
4. Wu, K.Y.J., **Zou, Y.**, Xu, J.J, Nohra, C., Binnie, M., Shapera, S., Fisher, H.J, McInnis, M., Ryan, M.C., Hantos, Z., Chow, C., "Detection of Idiopathic Pulmonary Fibrosis Disease Progression using Respiratory Oscillometry"

Conference Presentation & Abstract

1. Bosch, A.[*2], Brunsvig, J.K., Brandao, L., **Zou, Y.**, Vincelli, J., Amiri, N., Avila L., (2024) "The mediating role of coagulation factor VIII in the effect of chronic inflammation on recurrent thrombotic events in children with non-central line deep vein thrombosis", GTH 2024 **(Oral Presentation)**
2. Wu, K.Y.J.[*], **Zou, Y.**, Xu, J.J, Nohra, C., Binnie, M., Shapera, S., Fisher, H.J., McInnis, M., Ryan, M.C., Hantos, Z., Chow, C., (2024) "Detection of Idiopathic Pulmonary Fibrosis Disease Progression using Respiratory Oscillometry", ERS Congress 2024, **(Abstract)**
3. **Zou, Y.**[*], Grunnill, M., Patel, S., Li, L., Duvvuri R.V., (2023) "Developing of statistical models and machine learning models to predict the COVID-19 cases, Ontario, Canada", The Eleventh Annual Canadian Statistics Student Conference (2023 CSSC) **(Poster Presentation)**
4. **Zou, Y.**[*], Langer, L., Liu, K., (2023) "Bayesian sensitivity analysis for unmeasured confounding in cross-sectional & longitudinal data", 2nd CANSSI-NISS Health Data Science Workshop **(Poster Presentation)**
5. Ota, H.[*], **Zou, Y.**, Wu, K.Y.J., Michaelchuk, W. W., Dubray, J.,McInnis, C.M., Chow, C., Schwartz, R. (2023) "Respiratory Effects of Nicotine and THC e-Cigarettes", CIHR IRSC Workshop **(Poster Presentation)**
6. Min, S.[*], Xie, A.[*], Yang, M.[*], **Zou, Y.**[*], (2023) "Exploring the resilience of industrial productivities by climate change during recessions" 2023 SSC Annual Meeting (SSC2023) **(Poster Presentation in SSC Case Study Competition)**

Skills

Programming Language: R, Python, SAS, SQL
Data Analytic: Statistical Analysis (Regression Analysis, Time-series Analysis, Survival Analysis, Power Analysis),
Report Generation (Quarto, R Markdown, Jupyter, LaTeX),
Bayesian Programming (RJags, Stan),
Machine Learning (Scikit-Learn),
Data Visualisation (Matplotlib, ggplot2),

Professional Service

Student Member, Health Data Working Group, Dalla Lana School of Public Health Sept. 2023 – Present
Student-Led Seminar Committee, Dalla Lana School of Public Health Sept. 2023 – Present
Web Master, Dalla Lana School of Public Health Sept. 2022 – Present

[1] † co-first authorship
[2] *presenters