

# Yiming (Emmett) Peng

 [emmett-peng.github.io](https://github.com/emmett-peng) |  [emmett.peng@mail.utoronto.ca](mailto:emmett.peng@mail.utoronto.ca) |  [Emmett Peng](#) |  [Emmett-Peng](#)

## EDUCATION

- **University of Toronto, Dalla Lana School of Public Health** Sept 2024 – Aug 2026 (Expected)  
*Master of Science in Biostatistics – Thesis Option; GPA: 4.00/4.00*  
Thesis: Bayesian Latent Class Models for Estimating the Causal Effects on Multiple Cognitive Trajectories in Aging Populations  
◦ Co-supervised by Dr. Kuan Liu and Dr. Zihang Lu
- **Beijing Institute of Technology, Zhuhai** Sept 2020 – Jun 2024  
*Bachelor of Science in Applied Statistics; GPA: 3.96/4.00 (WES)*  
Thesis: Deep Learning and Stochastic Modeling of Human Activity Patterns through Smartwatch Sensors for Health Interventions (*Honored as Outstanding Thesis*)  
◦ Supervised by Dr. Han C.W. Hsiao

## PUBLICATIONS AND PRESENTATIONS

C=CONFERENCE, S=IN SUBMISSION, W=WORKING PAPERS

- [C] **Yiming (Emmett) Peng**, Victoria Truong, Aoqi Xie, Yu Shi, Pingzhao Hu (2025) **Enhancing Breast Cancer Treatment Response Prediction with Single-Cell RNA Sequencing and Large Language Models**. 2025 *Statistical Society of Canada (SSC) Annual Meeting*, p58. May 25 - 28, Saskatoon, Saskatchewan, Canada. [\[Slides\]](#) [\[Poster\]](#)
- [C] Jiahui Zhang, Yu Shi, Aoqi Xie, **Yiming (Emmett) Peng**, Pingzhao Hu (2025) **Uncertainty-Calibrated Interpretable Tabular Transformer Model for Atrial Fibrillation Prediction with Competing Risk**. 2025 *Statistical Society of Canada (SSC) Annual Meeting*, p42. May 25 - 28, Saskatoon, Saskatchewan, Canada. [\[Poster\]](#)
- [S] **Yiming (Emmett) Peng\***, Victoria Truong\*, Aoqi Xie, Yu Shi, Pingzhao Hu (2025) **PRECISE: A Framework for the Prediction of REsponse using Cell-type Inference and Single-cell Embedding in Breast Cancer Patients Receiving Anti-PD-1 Treatment**. # Submitted to *PLOS Genetics* [\[Code\]](#)
- [W] **Yiming (Emmett) Peng**, Zihang Lu, Kuan Liu (2025) **Bayesian Latent Class Causal Inference with Nonparametric Covariate Modeling for Baseline Cognitive Outcomes in Aging Populations**. # An earlier version of this work was invited for presentation at *Data Science Institute Causal Inference Workshop*, Toronto, Ontario, Canada, October 22, 2025. [\[Poster\]](#)
- [W] Daniela Denier, **Yiming (Emmett) Peng**, Mark Deneau, Kuan Liu, Amanda Ricciuto (2025) **Longitudinal Analysis of Repeated Serum Markers to Identify Clinically Relevant Patient Subgroups in Pediatric Primary Sclerosing Cholangitis: Data from the Pediatric PSC Consortium**.
- [W] Yuxin Jing, **Yiming (Emmett) Peng**, Ashley Danguedan, Andrea Knight (2025) **Examining the Relationship Between Socioeconomic Factors and Mental Health in Childhood-Onset Systemic Lupus Erythematosus Using a Multilevel Analysis**.
- [W] Jiahui Zhang, Yu Shi, Aoqi Xie, **Yiming (Emmett) Peng**, Pingzhao Hu (2025) **Predicting New-Onset Atrial Fibrillation with Competing Risks Using an Uncertainty-Calibrated Interpretable Tabular Transformer: Evidence from the Cardiovascular Imaging Registry of Calgary (CIROC)**.

## PROFESSIONAL EXPERIENCE

- **Knight Lab, The Hospital for Sick Children** Jun 2025 - Present  
*Clinical Research Project Assistant, supervised by Dr. Andrea Knight* Toronto, Canada
  - Implement Bayesian statistical methods in R to investigate socioeconomic and mental health outcomes in childhood-onset systemic lupus erythematosus (cSLE).
  - Collaborate on designing the research framework and lead statistical analyses, including data pre-processing, imputation, and modeling.
  - Provide statistical consulting for interdisciplinary teams and contribute to manuscript drafting for publication.
- **The Hospital for Sick Children** Jun 2025 - Present  
*Research Volunteer, supervised by Dr. Amanda Ricciuto and Dr. Anne Griffiths* Toronto, Canada
  - Implement latent class mixed models in R to analyze longitudinal serum biomarker trajectories in primary sclerosing cholangitis (PSC) patients.
  - Implement survival analysis incorporating latent class membership, showing its statistical and clinical significance in predicting transplant outcomes alongside other covariates.
  - Collaborate with clinicians and biostatisticians to interpret findings and contribute to manuscript preparation.

- **Hu Lab, Dalla Lana School of Public Health, University of Toronto**  
*Data Science Research Student, supervised by Dr. Pingzhao Hu*
    - Developed an integrated multi-stage pipeline in Python combining single-cell RNA-seq data with embeddings from large language models (LLMs) and foundation models to identify cell type-specific biomarkers for breast cancer treatment response.
    - Implemented supervised classification using cell-type-specific biomarkers and cluster-specific bulk gene-expression profiles to predict treatment response, achieving improved predictive performance over baseline methods.
    - Drafted manuscripts and presentations for conferences and peer-reviewed journals.
  - **The University of Hong Kong**  
*Research Volunteer, supervised by Dr. Liwu Zheng*
    - Collaborate with clinicians on biostatistical research projects.
    - Provide statistical consulting for clinical studies.

Oct 2024 - Jun 2025

Toronto, Canada

Jan 2025 - Apr 2025

HONORS AND AWARDS



Amounts in Canadian dollars unless otherwise specified

• <b>Winner – Case Studies in Data Analysis Competition, SSC 2025 - \$2,500 per team</b>	2025
Statistical Society of Canada (SSC)	
• <b>CSSC 2025 Travel Award - \$150</b>	2025
Canadian Statistics Student Conference (CSSC), sponsored by CANSSI	
• <b>SGS Conference Grant - \$450</b>	2025
University of Toronto	
• <b>BITZH President’s Scholarship - \$2,000</b>	2023
Beijing Institute of Technology, Zhuhai	
• <b>College Dean’s Honor Scholarship - \$7,000</b>	2021 - 2024
Beijing Institute of Technology, Zhuhai	
• <b>BITZH Freshman Entrance Scholarship and Continuing Scholarship - \$18,000</b>	2020 - 2024
Beijing Institute of Technology, Zhuhai	
• <b>BITZH Outstanding Student Scholarship</b>	2020 - 2024
Beijing Institute of Technology, Zhuhai	

SKILLS

- **Programming Languages:** R, Python, MATLAB, C++
- **Tools & Technologies:** Git, LaTeX, RMarkdown, Jupyter Notebook, Eviews, Maple, Mathematica, SQL, Excel
- **Statistics Concepts:** Causal Inference, Latent Class Analysis, Survival Analysis, Longitudinal Data
- **Machine Learning Models:** Transformers, RNNs, Regression (GLM, Penalization), CNNs, Neural Networks
- **Languages:** Native proficiency in Chinese; professional working proficiency in English

COMMUNITY INVOLVEMENT AND LEADERSHIP EXPERIENCE

• <b>Biostatistics Union of Graduate Students (BUGS)</b>	Sep 2024 - Present
PHSA MSc Representative and Seminar Committee member	
• <b>Health Data Working Group</b>	Sep 2024 - Present
Student Member	
• <b>Public Health Students’ Association, University of Toronto</b>	Sep 2025 - Present
Biostatistics MSc Representative	
• <b>Student Union, College of Global Talent, Beijing Institute of Technology, Zhuhai</b>	Sep 2020 – Jun 2022
Officer	

REFERENCES

1. **Kuan Liu**  
Assistant Professor, Institute of Health Policy, Management and Evaluation  
University of Toronto  
Email: kuan.liu@utoronto.ca  
Relationship: Thesis Supervisor
2. **Zihang Lu**  
Assistant Professor, Department of Public Health Sciences  
Queen’s University  
Email: zihang.lu@queensu.ca  
Relationship: Thesis Supervisor
3. **Pingzhao Hu**  
Associate Professor, Dalla Lana School of Public Health  
University of Toronto  
Email: pingzhao.hu@utoronto.ca  
Relationship: Practicum Supervisor