# KEN KANGYI PENG

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## EDUCATION

**PhD in Statistics** *2025 (Expected before Sep)*
Simon Fraser University, BC, Canada
Thesis: "Learning Association of Stochastic Processes, with Applications in Public Health and Sports Analytics"
Supervisors: X. Joan Hu and Tim Swartz

**MSc in Statistics** *2022*
Simon Fraser University, BC, Canada
Thesis: "Bayesian Approaches for Critical Velocity Models"
Supervisors: Tim Swartz and Gary Parker

**BSc in Statistics & minor in Mathematics** *2020*
Simon Fraser University, BC, Canada

## EXPERIENCE

**Research Assistant**

- **University Of Ottawa** *Jan 2024 - Sep 2024*
  Department of Civil Engineering
  Project: CoVaRR-Net Wastewater Surveillance Rapid Response Research Group
  Supervision: Robert Delatolla
- **University of Waterloo** *Jan 2022 - Current*
  Department of Statistics and Actuarial Science
  Projects: CANSSI CRT "The Application of Statistical Methods to Wastewater Analysis" & MfPH - NSERC "Emerging Infectious Diseases Modelling Initiative"
  Supervision: Charmaine Dean, Robert Delatolla, and X. Joan Hu
- **Simon Fraser University** *Mar 2020 - Current*
  Department of Statistics and Actuarial Science, Sports Analytics Group
  Project: CANSSI CRT "Sports Analytics"
  Supervision: Tim Swartz and X. Joan Hu
- **Simon Fraser University** *Mar 2020 - May 2021*
  Department of Biomedical Physiology and Kinesiology
  Supervision: Tim Swartz and David C. Clarke

**Teaching Assistant**

*Simon Fraser University*

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|---|---|
| STAT240 Introduction to Data Science | *Spring 2025* |
| STAT302 Analysis of Experimental and Observational Data | *Fall 2023* |
| STAT830 Statistical Theory I | *Fall 2022* |
| STAT261 Laboratory for Introductory R for Data Science | *Fall 2021* |
| STAT201 Statistics for the Life Sciences | *Summer 2021* |
| STAT380 Introduction to Stochastic Processes | *Spring 2021* |
| STAT203 Introduction to Statistics for the Social Sciences | *Fall 2020* |
| STAT100 Chance and Data Analysis | *Fall 2020* |

### Other Professional Experience

- **Chief Data Scientist** *Jun 2023 - Current*
  AccMov Health Inc.
  Lead data strategy, collaborate with sports and health scientists to analyze data and drive business insights
- **Sports Analyst** *Jan 2022 - Dec 2023*
  Stathletes
  Hockey analytics
- **Coop Data Scientist** *Oct 2021 - Dec 2021*
  Public Health Agency of Canada
  Worked with database of ArriveCAN App
- **Coop Statistician** *May 2019 - Sep 2019*
  BC Centre for Excellence in HIV/AIDS
  Worked with health administrative data
- **Coop Data Scientist** *May 2018 - Dec 2018*
  Statistics Canada
  Worked with Canada's multifactor productivity database & T2 leap linked administrative database

## RESEARCH PAPERS

### Papers in Refereed Journals

- Hegazy, Nada, **Peng, K. K.**, et al. "Variability of Clinical Metrics in small population communities drive perceived wastewater and environmental surveillance data quality: Ontario, Canada-wide study." *ACS ES&T Water* (2025).
- **Peng, K. K.**, Hu, X. J. & Swartz, T. B. "On the time of corner kicks in soccer: an analysis of event history data." *Computational Statistics* (2024).
- **Peng, K. K.**, Brodie, R. T., Swartz, T. B., & Clarke, D. C. "Bayesian inference of the impulse-response model of athlete training and performance." *International Journal of Performance Analysis in Sport, 1-16* (2023).
- **Peng, K. K.**, Renouf, E. M., Dean, C. B., Hu, X. J., Delatolla, R., & Manuel, D. G. "An exploration of the relationship between wastewater viral signals and COVID-19 hospitalizations in Ottawa, Canada." *Infectious Disease Modelling* (2023).
- **Peng, K. K.**, Clarke, D. C., Swartz, T. B. "Bayesian approaches for critical velocity modelling of data from intermittent efforts". *International Journal of Sports Science & Coaching* (2022).

### Papers under Review

- **Peng, K. K.**, Dean, C. B., Delatolla, R., & Hu, X. J. "Learning associations of COVID-19 hospitalizations with wastewater viral signals by Markov modulated models." Submitted. Invited submission to a special issue on "Understanding infectious disease dynamics from a wastewater lens" in *Epidemics*, available at *arXiv preprint arXiv:2410.07487*.
- Wen, Jiabi, **Peng, K. K.**, et al. "Site-specific wastewater-based surveillance in early detection of COVID-19 new cases and prediction of mass testing outcomes in long-term care facilities." Submitted.

### Papers in Progress

- **Peng, K. K.**, Dean, C. B., & Hu, X. J. "Joint modeling of two stochastic processes via a latent bridge: investigating dynamic associations between wastewater viral loads and COVID-19 hospitalizations." Invited submission to *Canadian Journal of Statistics*. In progress; available upon request.
- **Peng, K. K.**, Hu, X. J. & Swartz, T. B. "Dynamical learning of event occurrence over time using a generalized Hawkes process model." In progress; available upon request.

### Other Publication

- Hegazy, Nada, **Peng, K. K.**, et al. "P-1954. Wastewater-Based Surveillance More Accurately Describes Disease Burden Of COVID-19 In Communities with Less Than 60,000 Inhabitants–An Ontario-Wide Study." *Open Forum Infectious Diseases* (2025) Vol. 12. No. Supplement_1. US: Oxford University Press.

## PRESENTATIONS

### Invited Presentations

- 2025 Conference on Econometrics and Statistics: Infectious disease modeling
  *upcoming at Waseda University, Tokyo, Japan*
- 2025 International Conference on Statistics and Data Science: Environmental Modelling
  *upcoming at Vancouver, BC, Canada*
- 2025 Western North American Region of The International Biometric Society: Novel models of survival data
  *upcoming at Whistler, BC, Canada*
- 2025 Lifetime Data Science: Recent Developments in the Analysis of Life History Data with Multistate Models
  *upcoming at Brooklyn, NY, US*
- 2024 Joint Staistical Meetings: Newly developed point process models for repeated events
  *Portland, Oregon, US*
- 2024 Western North American Region of The International Biometric Society: Sparse modeling for biomedical data
  *Fort Collins, Colorado, US*
- 2023 Western North American Region of The International Biometric Society: Real world challenges and recent methodological developments
  *Anchorage, Alaska, US*
- 2022 BIRS-CMO 22w5184: Statistical Challenges in the Identification, Validation, and Use of Surrogate Markers
  *Banff International Research Station. Remote*

### Other Presentations

- 2025 SFU STAT 240 guest lecture on text data manipulation
  *Burnaby, BC, Canada*
- 2023 Fields MfPH - Career Networking and Industry Partnership Event, The Fields Institute
  *Toronto, ON, Canada*
- 2023 North America Machine Learning, Optimization and Statistics Symposium, poster presentation
  *Vancouver, BC, Canada*
- 2022-2023 Colloquium on Mathematics for Public Health, The Fields Institute
  *Remote*
- 2022 Mathematics for Public Health Festival (MfPHest), Poster presentation, The Fields Institute
  *Toronto, ON, Canada*
- 2021 Canadian Statistical Sciences Institute collaborative research teams showcase event
  *Remote*
- 2021 Statistical Society of Canada annual meeting, Poster presentation
  *Remote*
- 2020 The SPort INnovation (SPIN) Summit, recipient of the Dr. Gord Sleivert Young Investigator Award
  *Remote*

## OTHER ACADEMIA ACTIVITIES

**Co-organizer**, Invited session at 2025 EcoSta: Innovative statistical approaches in wastewater-based epidemiology: Recent developments and applications *Summer 2025*

**Program Assistant**, Cascadia Symposium on Statistics in Sports *2024*

**Program Assistant**, Cascadia Symposium on Statistics in Sports *2023*

**Lab Meeting Coordinator**, Dr. Joan Hu's Lab *2024*

**Volunteer**, North America Machine Learning, Optimization and Statistics Symposium *Summer 2023*

**Paper Reviewer**, Canadian Journal of Statistics *2023*

**Next Generation Member**, The Fields Institute for Research in Mathematical Sciences MfPH *2022–2024*

## AWARDS

Multiple Graduate Fellowships, SFU – Total: $14,000 CAD *2021–2025*

Multiple PhD Research Scholarships, SFU – Total: $9,122 CAD *2023–2025*

SFU Travel and Research Award – $1,500 CAD *Summer 2024*

Fields MfPH – Career Networking & Industry Partnership Event Travel Funding – $1,500 CAD *Fall 2023*

Mathematics for Public Health Festival Travel Funding – $2,000 CAD *Fall 2022*

Dr. Gord Sleivert Young Investigator Award – $500 CAD *Summer 2020*

NSERC Undergraduate Student Research Award – $4,500 CAD *Summer 2019*