KEN KANGYI PENG

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EDUCATION

PhD in Statistics *2025*
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

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

- **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." *Epidemics*: 100840 (2025).
- 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

- Wen, J., **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.
- Zhao, X., **Peng, K. K.**, Graham, R. B. "Seasonal Variations in Biomechanical Performance Among Female Varsity Soccer Players." 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." Unpublished manuscript. Invited submission to *Canadian Journal of Statistics* as part of Dean, C. B.'s 2023 SSC Gold Medal recognition.
- **Peng, K. K.**, Hu, X. J. & Swartz, T. B. "Dynamical learning of event occurrence over time using a generalized Hawkes process model." Unpublished manuscript.

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
  Vancouver, BC, Canada
- 2025 Western North American Region of The International Biometric Society: Novel models of survival data
  Whistler, BC, Canada
- 2025 Lifetime Data Science: Recent Developments in the Analysis of Life History Data with Multistate Models
  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

ACADEMIA ACTIVITIES

Leadership

- **Co-organizer & Chair**, Invited session at 2025 EcoSta: *Innovative statistical approaches in wastewater-based epidemiology: Recent developments and applications* *2025*
- **Lab Meeting Coordinator**, Dr. Joan Hu's Lab *2024–2025*
- **Mentoring & Co-supervision** (Informal supervisory roles)
  Julian Lau, (Undergrad, UAlberta) — with Prof. Bonita Lee & Prof. Lilly Pang *2025 Aug - Present*
  Krystal He, (MSc, SFU) — with Prof. Joan Hu *2025 May - Present*
  Riley Isaac, (Undergrad, SFU) — with Prof. Joan Hu *2024 May - Dec*

Service

- **Reviewer**, *Canadian Journal of Statistics*, *Statistical Theory and Related Fields*
- **Volunteer**, International Conference on Statistics and Data Science *2025*
- **Program Assistant**, Cascadia Symposium on Statistics in Sports *2023–2024*
- **Volunteer**, North America Machine Learning, Optimization and Statistics Symposium *Summer 2023*
- **Next Generation Member**, The Fields Institute for Research in Mathematical Sciences, Mathematics for Public Health (MfPH) program *2022–2024*

AWARDS

Multiple Graduate Fellowships, SFU – Total: $17,500 CAD *2021–2025*

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

SFU Travel and Research Award – $2,054 CAD *2024-2025*

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*