Steven Wilkins-Reeves

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EDUCATION

University of Washington, Seattle, WA
PhD, Statistics, Sept 2019 - GPA: 3.90/4.00

University of Toronto, Toronto, ON
Master of Science, Statistics, June 2018 GPA: 4.00/4.00

Queen's University, Kingston, ON
Bachelor of Science, Mathematical Physics, June 2017 GPA: 4.25/4.30

RESEARCH

Research Interests:
Latent Variable Models, Latent Geometry, Network Analysis, Causality and Interference, Statistical Machine Learning, Optimization, applications to Cybersecurity and Neurodegenerative Disease

Statistics Methodology:
"Asymptotically Normal Estimation of Local Latent Network Curvature" Wilkins-Reeves, Steven; McCormick, Tyler. (2022). https://arxiv.org/abs/2211.11673.
Developed a novel method for local latent space curvature estimation from a noisy distance matrix with applications to cybersecurity. Established statistical convergence as well as a general result for copulae.

"**D**ata Harmonization via **N**onparametric **O**utcome **I**mputations (DNOIS)" , Wilkins-Reeves, Steven; Chen, Yen-Chi and Chan, Gary; Submitted to *The Annals of Applied Statistics*. (2021). https://arxiv.org/abs/2110.06077.
Developed and established theoretical results for a latent variable method for converting scores with implementation in R. Primary application for converting cognitive test scores used in Alzheimer's research and cognitive testing.

Statistics Theory:
"Phase Transitions of Deconvolution in the Semiparametric Rasch Model" *To Submit to the Annals Of Statistics* Wilkins-Reeves, Steven; Chen, Yen-Chi and Chan, Gary. (2022).
Derived finite sample valid convergence rates for estimating a nonparametric latent distribution in the Rasch model via nonparametric maximum likelihood. Minimax optimality is established and theoretical techniques used to establish convergence of the parametric bootstrap.

OTHER PROJECTS

Statistical Consulting: Winded to Winning: An Investigation of Fatigue Metrics of Rugby Players. Used a numerical fatigue model to predict the exhaustion of Rugby players using in game data. Supervised by Ming Chang-Tsai.

Undergraduate Thesis: An Investigation Of Readily Available Material For Radiotherapy Phantom Development. Supervised by John Schreiner. Included undergraduate thesis poster presentation.

Talks

August 2022: "Local Latent Space Network Curvature Estimation". *Oral presentation.* Joint Statistical Meetings. Statistical Learning and Data Science Section, Network And Data Models. Washington DC.

August 2021: "A Statistical Framework for Data Harmonization". *Oral presentation.*

Nonparametric Statistics: Nonparametric Modelling. *Virtual.*

July 2021: "A Statistical Framework for Data Harmonization". *Poster presentation.* Alzheimer's Association International Conference *Virtual.*

June 2021: "A Statistical Framework for Data Harmonization". *UW Causal Inference And Missing Data Working Group.*

Teaching

Teaching Assistant

University of Washington

- STAT 535 Foundations of Statistical Machine Learning
- STAT 311 Elements of Statistical Methods
- STAT 340/342 Introduction to Probability and Mathematical Statistics I/III

University of Toronto

- STAT 220 The Practice of Statistics I
- STAT 305 Design and Analysis of Experiments
- STAT 257/STAT 261 Probability, Statistics and Data Analysis I/II

AWARDS

University of Washington Department of Statistics Supplemental Fellowship (2022): Graduate Student Award for presenting research at the joint statistical meetings in Washington DC.

University of Washington Department of Statistics Supplemental Fellowship (2019): Awarded to top entering PhD students in the Department of Statistics at the University of Washington.

University of Toronto Tuition Fellowship (2017/2018): Awarded annually by the University to students pursuing graduate studies.

Medal in Mathematics and Physics, Queens University (2017): Awarded annually by the University to the candidate graduating with a first-class honours degree who is deemed by a Department to have achieved the highest standing in a concentration offered by that Department.

Susan Near Prize in Physics, Queens University (2016): Awarded to the student in an honours B.Sc. program with concentration in Physics on the basis of highest standing in PHYS 321, PHYS 344, PHYS 345, and PHYS 372 taken in the same academic year.

Nellie and Ralph Jeffrey Award in Mathematics, Queens University (2016): Awarded to the student entering the fourth year of the Mathematics and Engineering program, or of an honours program with a Mathematics major, having the highest standing in the mathematics courses of the first three years and an overall first- class average.

Albert Harold Lightstone Scholarship, Queens University (2016): Awarded to the student entering the fourth year of an honours program with a major concentration in Mathematics or Statistics having the second-highest standing in the mathematics and statistics courses of the first three years.

Susan Near Prize in Physics, Queens University (2015): Highest Standing in PHYS 242 and 239 or PHYS 206 and 212.

Marion and Arthur Wonnacott Scholarship, Queens University (2015): Highest Standing in MATH 280 and 281.

Nellie and Ralph Jeffery Award in Mathematics, Queens University (2015): Awarded based on the recommendation of the department

Deans Honour List With Distinction, Queens University (2014/2015/2016): Awarded to students in the top 3% in their program.

Academic All-Canadian, Queens University (2014/2015/2016/2017): Awarded by the Governor General of Canada to student-athletes who achieve an academic standing of 80% or better while playing on one of their university's varsity teams.

Annie Bentley Lillie Prize in First Year Calculus, Queens University (2014): Awarded on the recommendation of the department to a student in first year calculus.

Day Prize in Physics and Math, Queens University (2014): Awarded to the student with the highest combined standing in MATH 120 and PHYS 104.

The William Coombs Baker Memorial Prize, Queens University (2014): Awarded to the student with the highest standing in PHYS 104.

Principals Scholarship, Queens University (2013-2015): Awarded to a student entering Queen's University with above a 95% average.

Programming and Scripting Languages

R, Python, SQL, LaTeX, MATLAB, Maple, Mathematica

WORK EXPERIENCE

Research Assistant — University of Washington
Sep. 2019 - Present — Seattle, WA
Developed theory and methodology for data harmonization, de-convolution, latent geometry and network interference problems. In collaboration with the National Alzheimer's Coordination Center (NACC). Developed theory and methodology surrounding for a latent variable score conversion model under measurement error.

Associate Data Scientist — University of Pittsburgh Medical Center
Jan. 2019 - Aug. 2019 — Pittsburgh, PA
Worked in the Clinical Analytics department implementing classifiers with Scikit-learn and LightGBM on electronic health record data. Applied these to prediction problems including: patients No-Show, hospital readmissions, and various diabetic outcomes. Achieved test accuracies at or above previous published results on similar problems. Spearheaded the use of interpretability algorithms for algorithm understanding with medical stakeholders within the data science team, and identified sources of data leakage

Coxswain — Canadian Coast Guard
Summer 2017 & 2018 — Thames River & Hill Island Ontario
Inshore Rescue Boat Coxswain (Team Leader) at the Canadian Coast Guard. Established training for crew, supervised training, managed of over $2M worth of government assets, ensured operational capabilities of the station, responded to mariners in distress, and educated public on boating safety. Organized training exercises with the Canadian and United States Coast Guard.

Tutor in Physics & Calculus — Queen's University
2014-2016 — Kingston, ON
Tutored students in physics and calculus on and individual and small group basis.

Coxswain Canadian Coast Guard
Summer 2014 & 2016 Thames River & Britt Ontario
Worked in a search and rescue team responding to marine emergencies. Additionally participated in public outreach events on boating safety.

OTHER SERVICE

Student Seminar Organizer UW, Department of Statistics
Sep 2022 - present Seattle
Organized the graduate student research seminar, where graduate students can present their own work, as well as prepare for dissertation examinations.

Graduate Student Representative UW, Department of Statistics
Jun 2021 - Jun 2022 Seattle
Worked to plan orientation and visit day events for incoming and prospective PhD students. Attended faculty meetings and worked as a liaison between the students and the faculty. Developed a virtual tour website for incoming students.

Causal Inference and Missing Data Reading Group Organizer UW, Department of Statistics
Sep 2020 - June 2021 Seattle
Organized a reading group on Causality and Missing Data in which we read "Semi-parametric Theory and Missing Data" by Anastasios A. Tsiatis as well as presented student's own research projects.