Chi-Kuang Yeh, PhD

CANSSI Distinguish Postdoctoral Fellow

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Current position

Sep 2023 –	CANSSI DISTINGUISH POSTDOCTORAL FELLOW, Department of Statistics and Actuarial Science, University of Waterloo, ON, Canada. Mentor: Peijun Sang, Archer Yi Yang & Qihuang Zhang
Sep 2023 –	ASSOCIATE POSTDOCTORAL FELLOW, Mila – Quebec AI Institute, QC, Canada. Host: Archer Yi Yang
Sep 2018 –	ASSOCIATE MEMBER, Waterloo Health Data Science lab. Host: Joel A. Dubin

Research areas

Functional data analysis • Time series analysis • Optimal design of experiments • Longitudinal data analysis • High-dimensional statistics • Dependence modeling

Education

Sep 2018 – Aug 2023	PhD in Statistics, University of Waterloo, ON, Canada Advisor: Gregory Rice & Joel A. Dubin Thesis: *Methods in Functional Data Analysis: Forecast Evaluation, Robust Serial Dependence Measures, and a Spatial Factor Copula Model*
Sep 2016 – Jul 2018	MSc in Statistics, University of Victoria, BC, Canada Advisor: Julie Zhou Thesis: *Optimal Regression Design under Second-order Least Squares Estimator: Theory, Algorithm and Applications*
Sep 2013 – Apr 2016	BSc (H.) in Mathematics & Statistics with minor in Computer science, University of Victoria, BC, Canada

Publications

PUBLISHED

[1]   **Yeh, C.-K.** & Zhou, J. (2021), "Properties of optimal regression designs under the second-order least squares estimator." *Statistical Papers*, 62, 75-92.

[2]   **Yeh, C.-K.**, Rice, G. & Dubin, J.A. (2022), "Evaluating real-time probabilistic forecasts with application to National Basketball Association outcome prediction." *The American Statistician*, 76, 214-223.

[3]   **Yeh, C.-K.**, Rice, G. & Dubin, J.A. (2023), "Functional spherical autocorrelation: A robust estimate of the autocorrelation of a functional time series." *Electronic Journal of Statistics*, 17, 650–687.

[4]   **Yeh, C.-K.** & Sang, P. (2023), "Variable Selection in Multivariate Functional Linear Regression." *Statistics in Bioscience.*

ABOUT TO BE SUBMITTED (THE PREPRINTS ARE AVAILABLE UPON REQUEST IN THIS SECTION)

[1]   Kuang, A., Nadi, A.A., **Yeh, C.-K.**, Morita, P., Dubin, J.A. Stevens, N.T. & Steiner, S.T., "Comparison between commercial selling and the medically graded wearable devices, a case study."

[2]   **Yeh, C.-K.**, Rice, G. & Hou, Z., "Bandwidth selection for estimation of the long-run covariance of functional time series via semi-parametric methods."

Awards & Honours

2021 – 2023	Queen Elizabeth II Graduate Scholarship, Government of Ontario
2020 – 2023	President's Graduate Scholarship, UWaterloo
2022 Mar	Statistics and Actuarial Science Best Research Presentation Prize, SAS Research Presentation day, UWaterloo
2022 Mar	Statistics & Actuarial Science Chair's Award, UWaterloo
2020 – 2021	Ontario Graduate Scholarship, Government of Ontario
2021 Apr	Statistics & Actuarial Science Chair's Award, UWaterloo
2018 – 2021	Mathematics Domestic Doctoral Scholarship, UWaterloo
2018 – 2020	Math Domestic Grad Award, UWaterloo
2020 Nov	Statistics & Actuarial Science Chair's Award, UWaterloo
2020 Mar	Statistics & Actuarial Science Chair's Award, UWaterloo
2019 Nov	University of Waterloo Graduate Scholarship, UWaterloo
2018 Jun	Student Travel Award, Statistical Society of Canada
2018	Graduate Student Conference Travel Grant, UVic
2018 Apr	CUPE Conference Travel Award, UVic

2017 – 2018	Faculty of Graduate Studies Scholarship, UVic
2017 Dec	Florence and Wallace Wilkinson Memorial Award, UVic
2016	University Scholarship, UVic
2010	Summit Entrance Scholarship, Simon Fraser University

Presentations

INVITED

2024 **Functional spherical autocorrelation: robust autocorrelation estimation of a functional time series** (Scheduled), Feb 23, PIMS data science seminar series and departmental seminar, University of Victoria and Online Broadcast, Victoria Canada.

Multivariate spatial functional principal component analysis, (Scheduled), June 2-5, Statistical Society of Canada annual meeting, Memorial University of Newfoundland, St. John's, Newfoundland and Labrador, Canada.

Bandwidth selection for estimation of long-run covariance of functional time series using semi-parametric approach (Scheduled), TBA, The Sixth ICSA-Canada Chapter Symposium.

2023 **Functional spherical autocorrelation: robust autocorrelation estimation of a functional time series**, July 17th, 64th ISI World Statistics Congress, Ottawa, Canada.

Functional spherical autocorrelation: a robust estimate of the autocorrelation of a functional time series, March 8, Institution of Statistics Seminar, Academia Sinica, Taipei, Taiwan.

CONTRIBUTED

2023 **Functional Spherical Autocorrelation: Robust Autocorrelation Estimation of a Functional Time Serie**, Aug 7, Joint Statistical Meetings, Toronto, Canada.

Functional spherical autocorrelation: robust autocorrelation estimation of a functional time series, May 29, Statistical Society of Canada annual meeting, Carleton University, Ottawa, Canada.

2022 **Functional spherical autocorrelation: a robust estimate of the autocorrelation of a functional time series**, October 15, Third Waterloo Student Conference in Statistics, Actuarial Science and Finance, UWaterloo.

Projection based model validation and identification methods for functional time series, June 2, Statistical Society of Canada Annual Meeting, Virtual.

Projection based model validation and identification methods for functional time series, March 11, Statistics and Actuarial Science Virtual Research Presentation Day, UWaterloo, Canada.

2021 **Evaluating real-time updated probabilistic forecasts with application to National Basketball Association outcome prediction**, Statistical Society of Canada Annual Meeting, Virtual.

Evaluating real-time updated probabilistic forecasts with application to National Basketball Association outcome prediction, February 5th, Statistics and Actuarial Science Virtual Research Presentation Day, UWaterloo, Canada.

Evaluating the performance of continuously updated probabilistic forecasts with application to National Basketball Association, Student Seminar Series, Department of Statistics and Actuarial Science, UWaterloo, Canada.

2020 **Evaluating Probabilistic Forecasts with an Application in National Basketball Association**, Health Data Science Lab, UWaterloo, Canada.

2019 **Properties of Optimal Regression Designs under Second-Order Least Squares Estimator**, Waterloo Student Conference in Statistics, Actuarial Science and Finance, UWaterloo, Canada.

Current and Past Research conducted on freely available multi-center (eICU) and single-center (MIMIC's) databases for critical care research, Health Data Science Lab, UWaterloo, Canada.

2018 **Properties of Optimal Regression Designs under Second-Order Least Squares Estimator**, Sixth Canadian Statistics Student Conference, McGill University, Canada.

Optimal Regression Designs Under the Second-Order Least Squares Estimator, Joint Statistical Meetings, Vancouver downtown, BC, Canada.

2017 **On Particle Swarm Optimization Algorithm to Solve Statistical Problems**, Department of Mathematics and Statistics, UVic, Canada.

Teaching

Instructor - University of Waterloo

2024 Winter	**Stat 230 Probability**

Teaching Assistant - University of Waterloo

2022 Fall	**Stat 331 Applied Linear Models**, Instructor: Glen McGee.
2022 Winter	**Stat 454/854 Sampling Theory and Practice**, Instructor: Changbao Wu.
2021 Fall	**Stat 333 Applied Probability**, Instructor: Steve Drekic *&* Mirabelle Huynh.
2021 Spring	**Stat 333 Applied Probability**, Instructor: Steve Drekic *&* Mirabelle Huynh.
2021 Winter	**Stat 443 Forecasting**, Instructor: Gregory Rice.
2021 Winter	**Stat 929**, Instructor: Gregory Rice.
2021 Fall	**Stat 443 Forecasting**, Instructor: Paul Marriott.
2020 Fall	**Stat 331 Applied Linear Models**, Instructor: Samuel W.K. Wong.
2020 Spring	**Stat 331 Applied Linear Models**, Instructor: Kun Liang.
2019 Spring	**Stat 443 Forecasting**, Instructor: Paul Marriott.
2019 Spring	**Stat 231 Statistics**, Instructor: James Adcock.
2019 Winter	**Stat 330 Mathematical Statistics**, Instructor: Yeying Zhu.
2019 Winter	**Stat 231 Statistics**, Instructor: James Adcock.
2018Fall	**Stat 440/840 Experimental Design**, Instructor: Jeroen de Mast.
2018Fall	**Stat 231 Statistics**, Instructor: James Adcock.

Teaching Assistant - University of Victoria

2018 Spring	**Stat 255 Statistics for Life Sciences I**, Instructor: Michelle Edwards.
2018 Winter	**Stat 123 Data Science**, Instructor: Fan Wu.
2017 Winter	**Math 102 Calculus for Social and Biological Science**, Instructor: Brittany Halverson-Duncan.
2016F	**Stat 260 Introductory to Probability and Statistics I**, Instructor: Chedo Barone.
2014F	**Math 122 Logic and Foundation**, Instructor: Michelle Edwards.

Other - University of Victoria

2017	**Guest Lecture**, "Introduction to R Markdown and LaTeX." Statistics 353 Linear Regression, course instructor: Laura L.E. Cowen.
2017	**Teaching Assistant Conference Certificate**, Learning and Teaching Centre (LTC), UVic
2017	**Teaching Assistant ProD Certificate**, LTC, UVic
2017	**Teaching Fundamental Certificate**, LTC, UVic.

LANGARA COLLEGE

2012 - 2013 **Math & Stats Activity Centre (MSAC)**, Math tutor, Langara College, Vancouver, BC, Canada.

Service and Outreach

ORGANIZING AND VOLUNTEER SERVICE

2023 Oct **Fourth Waterloo Student Conference in Statistics, Actuarial Science and Finance**, Judge, UWaterloo, Canada.

2020 May - 2023 Aug **Student seminar series**, Organizer, Departmental Statistics and Actuarial Science, UWaterloo.

2022 **Third Waterloo Student Conference in Statistics, Actuarial Science and Finance**, Organizing Committee and Session chair, UWaterloo, Canada.

2022 **Datafest**, Mentor, American Statistical Association, University of Waterloo, Canada.

2020 **Second Waterloo Student Conference in Statistics, Actuarial Science and Finance**, Organizing Committee and Session chair, UWaterloo Canada.

2019 **First Waterloo Student Conference in Statistics, Actuarial Science and Finance**, Organizing Committee and Session chair, UWaterloo Canada.

2018 **Local student volunteer**, International Chinese Statistical Association, Joint Statistical Meeting, Vancouver, BC, Canada

JOURNAL REFEREE

2023 Computational Statistics & Data Analysis, The American Statistician

2022 TEST

Membership

1. Statistical Society of Canada
2. International Chinese Statistical Association
3. American Statistical Association
4. Western North American Region of the International Biometric Society
5. Eastern North American Region of the International Biometric Society
6. International Statistical Institute

Media Coverage

2023 CANSSI Distinguish Postdoctoral announcement

Reference

Joel A. Dubin
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