

# Chi-Kuang Yeh, PhD

Last updated: July 16, 2024

CANSSI Distinguish Postdoctoral Fellow

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🌐 WEBSITE: <https://chikuang.github.io/>

🐙 GITHUB: <https://github.com/chikuang>

🔍 GOOGLE SCHOLAR: [Chi-Kuang Yeh](#)

📄 RESEARCHGATE: [Chi-Kuang Yeh](#)

in LINKEDIN: <https://www.linkedin.com/in/chikuang/>

## Employment

- 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](#) & [Celia M.T. Greenwood](#)
- 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

- 2018 – 2023 PH.D. 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*
- 2016 – 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*

2013 – 2016 BSc (H.) in Mathematics & Statistics with minor in Computer science, University of Victoria, BC, Canada

## Publications

### PUBLISHED

- [1] **Yeh, Chi-Kuang** & Zhou, Julie (2021). Properties of optimal regression designs under the second-order least squares estimator. *Statistical Papers*, 62, 75-92. [\[LINK\]](#), [\[RESEARCHGATE\]](#)
- [2] **Yeh, Chi-Kuang**, Rice, Gregory & Dubin, Joel A. (2022). Evaluating real-time probabilistic forecasts with application to National Basketball Association outcome prediction. *The American Statistician*, 76, 214-223. [\[LINK\]](#) [\[ARXIV\]](#) [\[RESEARCHGATE\]](#)
- [3] **Yeh, Chi-Kuang**, Rice, Gregory & Dubin, Joel A. (2023). Functional spherical autocorrelation: A robust estimate of the autocorrelation of a functional time series. *Electronic Journal of Statistics*, 17, 650–687. [\[LINK\]](#) [\[ARXIV\]](#) [\[RESEARCHGATE\]](#)
- [4] **Yeh, Chi-Kuang** & Sang, Peijun (2023). Variable Selection in Multivariate Functional Linear Regression. *Statistics in Bioscience*. [\[LINK\]](#)

### PREPRINT

**Yeh, Chi-Kuang** & Zhou, Julie. CVXSADes: a stochastic algorithm for constructing exact optimal regression designs with single or multiple objectives. [\[ARXIV\]](#) [\[RESEARCHGATE\]](#)

Liu, Siyan, **Yeh, Chi-Kuang**, Zhang, Xin, Tian, Qinglong & Li, Pengfei. Positive and unlabeled data: model, estimation, inference, and classification. [\[ARXIV\]](#)

## Software

**Yeh, Chi-Kuang**, Zhou, Julie & Hou-Liu, Jason. Rpackage “SLSEdesign.” [\[CRAN\]](#) [\[GITHUB\]](#)

## Awards & Honours

- 2023 – 2025 CANSSI Distinguish Postdoctoral Fellowship, Canadian Statistical Sciences Institute
- 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 **Evaluating Real-Time Probabilistic Forecasts for Sports Games Outcome Prediction**, June 8, the Sixth ICSA-Canada Chapter Symposium, Crowne Plaza Niagara Falls-Fallsview, Niagara Falls, Ontario, Canada.

**Mass spectrometry data: A spatial functional data approach**, June 5, Statistical Society of Canada annual meeting, Memorial University of Newfoundland, St. John's, Newfoundland and Labrador, Canada.

**Robust Serial Dependence Measures of a Functional Time Series**, February 23, UVic-PIMS data science seminar series, University of Victoria with Online Broadcast, Victoria, Canada.

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**, August 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**, June 10, 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**, January 20, 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 Experience

INSTRUCTOR - UNIVERSITY OF WATERLOO

2024 winter **Stat 230 Probability.**

GUEST LECTURER - UNIVERSITY OF VICTORIA

2017 Fall *“Introduction to R Markdown and  $\LaTeX$ ”* in Stat 353 Applied Linear Regression, Host: Laura L.E. Cowen.

TUTORIAL INSTRUCTOR

University of Waterloo

2019 Spring **Stat 231 Statistics.**

2019 Winter **Stat 231 Statistics.**

University of Victoria

2018 Spring **Stat 123 Data Science.**

2017 Fall **Math 100 Calculus I – Pathway.**

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 Drekić & Mirabelle Huynh.

2021 spring **Stat 333 Applied Probability**, Instructor: Steve Drekić & Mirabelle Huynh.

2021 winter **Stat 443 Forecasting**, Instructor: Gregory Rice.

2021 winter **Stat 929 Time Series 1**, 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.  
**Stat 231 Statistics**, Instructor: James Adcock.  
 2019 winter **Stat 330 Mathematical Statistics**, Instructor: Yeying Zhu.  
**Stat 231 Statistics**, Instructor: James Adcock.  
 2018 fall **Stat 440/840 Experimental Design**, Instructor: Jeroen de Mast.  
**Stat 231 Statistics**, Instructor: James Adcock.

University of Victoria

2018 summer **Stat 255 Statistics for Life Sciences I**, Instructor: Michelle Edwards.  
 2018 spring **Stat 123 Data Science**, Instructor: Fan Wu.  
**Math 151 Finite Mathematics**, Instructor: Amanda Malloch.  
 2017 fall **Math 100 Calculus 1 – Pathway**, Instructor: Brittany Halverson-Duncan.  
 2017 spring **Math 102 Calculus for Social and Biological Science**, Instructor: Brittany Halverson-Duncan.  
 2016 fall **Stat 260 Introductory to Probability and Statistics I**, Instructor: Chedo Barone.  
 2015 fall **Math 102 Calculus for Social and Biological Science**, Instructor: Junling Ma  
 2015 spring **Math 100 Calculus I–Pathway**, Instructor: Elizabeth McLeish.  
**Math 101 Calculus II**, Instructor: Svetlana Oshkai.  
 2014 fall **Stat 255 Statistics for Life Sciences I**, Instructor: Laura L.E. Cowen.  
**Math 122 Logic and Foundation**, Instructor: Michelle Edwards.

OTHER - UNIVERSITY OF VICTORIA

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.

## Mentoring

Now **Tatiana Krikella**, PhD Candidate in Statistics (Biostatistics), UWaterloo, Canada.  
 Next Position: CANSSI distinguish postdoctoral fellow.

## Service and Outreach

### ORGANIZING AND VOLUNTEER SERVICE

- 2023 Nov - **Transfer Learning reading group**, Co-organizer, UWaterloo, Canada.  
Now  
2024 June **The Statistics Society of Canada Annual Meeting**, Student poster Judge, St. John's, Newfoundland and Labrador, Canada. **The Twelfth Annual Canadian Statistics Student Conference**, Judge, St. John's, Newfoundland and Labrador, Canada.
- 2023 Oct **Fourth Waterloo Student Conference in Statistics, Actuarial Science and Finance**, Judge, UWaterloo, Canada.
- 2020 May - **Student seminar series**, Organizer, Departmental Statistics and Actuarial Science,  
2023 Aug UWaterloo, Canada.
- 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

- 2024 The American Statistician  
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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### **Gregory Rice**

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### **Julie Zhou**

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Last updated: July 16, 2024 • Typeset in  $\text{\LaTeX}$

<http://nitens.org/taraborelli/cvtex>