YIJUN XIE

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EDUCATION

University of Waterloo *September 2017 - Present*
PhD in Statistics
Department of Statistics and Actuarial Science

University of British Columbia *August 2015 - April 2017*
MSc in Statistics
Department of Statistics

University of Notre Dame *August 2012 - May 2015*
BSc in Applied Mathematics
Department of Applied and Computational Mathematics and Statistics

RESEARCH INTERESTS

High Dimensional Data Analysis, Functional Data Analysis, Machine Learning

RECENT PROJECTS

Longitudinal Data Analysis with High Dimensional Covariates *September 2019 - Present*

- Proposed supervised and unsupervised learning framework for handling time-varying biomarkers in cancer related applications.

Dimensional Reduction for High Dimensional and Functional Data *January 2018 - Present*

- Proposed an innovative framework for efficient dimension reduction of high dimensional and functional data, which can serve as alternative to principal component analysis (PCA).

Legal Study on Labor Unions in British Columbia, Canada *September 2016 - November 2019*

- Conducted appropriate statistical analysis, provided oral and written reports, and prepared the data analysis for the research paper.

Bayesian Inference for Time Series *January 2016 - April 2017*

- Proposed an innovative inference method for autoregressive stochastic volatility model using Markov chain Monte Carlo (MCMC).

RESEARCH PAPERS

1. Xie, Y., Rice, G., and Kolkiewicz, A. (2020+). Projection pursuit based tests of normality with functional data. Under revision. Journal of Statistical Planning and Inference.
2. Jiang, S, Xie, Y, Colditz, GA. (2020+). Functional ensemble survival tree: dynamic prediction of Alzheimer's disease progression accommodating multiple time-varying covariates. Submitted. doi: 10.1101/2020.02.17.952994. [Preprint]
3. Slinn, S. and Xie, Y. (2020+). Unfair Labour Practices and the Dilemma of Certification Vote Timing. Submitted to Canadian Labour and Employment Law Journal.
4. Xie, Y., Rice, G., and Kolkiewicz, A. (2020+). Functional time series forecasting via projection pursuit. Ready for submission.

5. Jiang, S. and Xie, Y. (2020+). Dynamic prediction for time-to-event data based on a functional projection pursuit algorithm. Working paper.
6. Xie, Y., Rice, G., and Kolkiewicz, A. (2020+). Dimension reduction using projection pursuit in functional change-point detection. Working paper.
7. Xie, Y., Rice, G., and Kolkiewicz, A. (2020+). Change-point detection based on empirical characteristic functions. Working paper.
8. Xie, Y. and Nolde, N. (2020+). A flexible inference method for an autoregressive stochastic volatility model. Working paper.

CONFERENCES

11th International Conference on Bioinformatics Models, Methods and Algorithms *February 2020*
Xie, Y. and Jiang, S. (2020). Variable Selection Based on a Two-stage Projection Pursuit Algorithm.

2019 Statistical Society of Canada Annual Meeting *May 2019*
Xie, Y., Rice, G., and Kolkiewicz, A. (2019). An Application of Projection Pursuit in Functional Data Analysis: Functional Normality Test.

2018 Statistical Society of Canada Annual Meeting *June 2018*
Xie, Y. and Nolde, N. (2018). A Flexible Inference Method for an Autoregressive Stochastic Volatility Model with an Application to Risk Management.

HONORS AND AWARDS

UWGS Scholarship *2017, 2018, 2019*
Department Chairs Award *2018*
Statistical Society of Canada Annual Meeting Best Poster Award *2018*
Statistical Society of Canada Annual Meeting Student Travel Award *2016*

TEACHING EXPERIENCE

Teaching Assistant *September 2017 - December 2018*
Mathematical Statistics, Applied Linear Models, Computational Statistics and Data Analysis, Time Series (for PhD students) University of Waterloo

Teaching Assistant *September 2015 - April 2017*
Elementary Statistics for Applications University of British Columbia

PROGRAMMING SKILLS

R, Python, Tensorflow, Keras, SQL, Winbugs, UNIX/LINUX