Yijun Xie

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Summary of Qualifications

- 7 years of experience in functional and high dimensional data analysis, machine learning, time series, and predictive modeling.
- Expert programming skills in Python and R, proficient with various machine learning and deep learning frameworks.
- Excellent collaboration and communication skills through past projects with collaborators from government agency and law school.
- Outstanding project and time management skills.

Selected Recent Projects

New Framework for Dimension Reduction **2017-present**

- Proposed an innovative framework for efficient dimension reduction of functional and high dimensional data.
- Designed a novel algorithm for solving high dimensional optimization problems with high performance computing technique.
- Applied this new framework to statistical inference, time series forecasting, feature extraction, and change-point detection problems in functional and high dimensional data analysis.
- Wrote my PhD thesis, three submitted papers, two working papers, and a working R package based on this project.

Labor Law Study **(with Osgoode Hall Law School)** **2016-present**

- Participated in a legal study regarding labor unions in British Columbia, Canada as the only statistician in the research group.
- Cleaned and managed the database obtained from the labor board, conducted data analysis to support the research object.
- Provided statistical consulting and explained complicated concepts to researchers from law school in a clear and concise way.
- Wrote corresponding sections in quantitative methods and listed as an author of a law paper.

Alzheimer's Disease Study **(with WUSTL)** **2019-present**

- Collaborated with researchers from Washington University School of Medicine to understand the cause of progression of Alzheimer's Disease using longitudinal genetic data.
- Developed machine learning algorithm using random forest and MFPCA to identify and extract features from high dimensional and irregular data.
- Submitted a research paper and published an R package.

Financial Time Series **2016-2017**

- Proposed an original inference method for Autoregressive Stochastic Volatility model aims for quantile prediction and risk management.
- Built a corresponding algorithm using Markov chain Monte Carlo and parallel computing techniques.

Education

Ph.D. in Statistics **2017-present**

- University of Waterloo, Waterloo, ON, Canada
- Department of Statistics and Actuarial Science

M.Sc. in Statistics **2015 - 2017**

- University of British Columbia, Vancouver, BC, Canada
- Department of Statistics

B.Sc. *cum laude* **2012 - 2015**

- University of Notre Dame, South Bend, IN, USA
- Department of Applied and Computational Mathematics and Statistics

Experience

- Doctoral Researcher 2018-present
- Research Assistant 2016-2017
- Teaching Assistant 2015-2018

Awards

- Department Chairs Award 2018
- Statistical Society of Canada Annual Meeting Best Poster Award 2018
- UWGS Scholarship 2017, 2018
- University of Waterloo Graduate Entrance Award 2017
- Statistical Society of Canada Annual Meeting Student Travel Award 2016

Selected Coursework

- Regression and GLMM
- Experimental Design
- Survey Sampling
- Mathematical/Computer Modeling
- Bayesian Statistics
- Extreme Value Theory
- Stochastic Process
- Time Series Analysis
- Robust Statistics
- Mathematical Finance
- Statistical Consulting