

## **Data Science Seminar Series**

Monday, November 20, 9:30-10:30 am, virtual/Teams

### **TITLE**

Kernel metric learning for clustering financial wellness surveys

### **SPEAKER**

Dr. John Thompson

### **ABSTRACT**

Change-point analysis is the study of data with sudden changes or jumps in the underlying relationships. This talk will discuss modern approaches for kernel-based change-point regression function estimation. Anisotropic smoothing utilizes an iterative change-point estimation procedure to smooth regression functions between change-points. Data sharpening can then be used to improve change-point estimation by decreasing estimator bias around change-points through a process known as mean-shift clustering. We will apply this methodology to simulated data and data measured from fire spread experiments.

### **BIOGRAPHY**

Dr. John R.J. Thompson is an Assistant Professor at the University of British Columbia (Okanagan campus) whose areas of expertise are nonparametric and applied statistics and machine learning. His research interests lie in smoothing, distance metric learning, clustering, and change-point analysis. This research is motivated by applications to behavioural finance and environmental science, including estimating forest fire spread using anisotropic smoothing techniques and estimating fuel types in regional satellite imagery, clustering the trading behaviours of Canadian investors under the guidance of financial advisors, and designing effective financial measures and Robo-tools that aid financial advisors in supporting their clients' investment portfolios. John is the lead organizer of the upcoming workshop "Machine Learning for Investor Modelling and Recommender Systems" at the 4th ACM International Conference on AI in Finance on November 27th 2023, as well as the lead guest editor of the special issue "Statistical and Machine Learning for Investor Modelling" at the Journal of Behavioral Finance.

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