

Data Science Seminar Series

Thursday, March 24th, 3:30-4:30 pm, S375

TITLE

Patient Oriented Predictive Modelling of Healthcare Utilization: Engaging Patient Partners to Enhance Data Science

SPEAKER

Dr. Piper Jackson (TRU, Computing Science) and Dr. Shannon Freeman (Nursing, UNBC)

ABSTRACT

The *Patient Oriented Predictive Modelling of Healthcare Utilization* (POPMHU) project was funded by the BC SUPPORT Unit to explore how advanced data science methods can be applied to healthcare data using a patient-oriented approach. We were provided interRAI Home Care and Long-Term Care data through partnerships with the Northern and Interior Health Authorities, and we have developed machine learning models and visual analytics for this data. CIHR's Strategy for Patient-Oriented Research (SPOR) emphasizes inclusiveness, support, mutual respect, and co-building as key aspects of successful engagement with patient partners. Drawing upon this approach, we designed our project to fully include patients as partners in the research process. This has supported our pursuit of research that meets the needs and expectations of patients, and also benefits from their knowledge and lived experience. Further, it is helpful in avoiding some of the pitfalls of data science, such as algorithmic bias. In this presentation, we will outline the benefits of augmenting data science research by making it patient-oriented, followed by some guidance on how to put it into practice. Finally, members of our diverse team will share their work and lessons they have learned while engaging in patient-oriented research.

BIOGRAPHY

Dr. Piper Jackson is an Adjunct Professor in Computing Science at Thompson Rivers University. His research explores how innovations in computing science can be applied to complex social issues of pressing concern. Beginning in computational modelling and simulation, he has more recently been focused on advanced data science methods such as machine learning. Dr. Jackson's research career is characterized by a dedication to interdisciplinary collaboration. He has worked as a computational expert on projects spanning Criminology, Defense, Political Science, Public Health, and Gerontology. He is a former director of the Modelling of Complex Social Systems (MoCSSy) Program at Simon Fraser University's IRMACS Centre.

Dr. Shannon Freeman is an Associate Professor in the School of Nursing at the University of Northern British Columbia. As a social gerontologist, Dr. Freeman incorporates a collaborative approach to engage in a broad range of research activities focusing on the health and well-being of vulnerable populations. She is a member of AGEWELL, Canada's technology and aging network, focusing on innovative solutions to

support healthy aging and is leading work examining clinical need for long-term care in rural and northern communities. Dr. Freeman has founded the Centre for Technology Adoption for Aging in the North (CTAAN), which connects researchers and technology developers with healthcare systems decision-makers, leaders, and care providers in order to advance technology that supports older adults in rural and northern communities.

https://www.tru.ca/science/masters-degrees/mscads/Data_Science_Seminar_Series.html