



OMNI | **RÉUNIS**
 One Health Modelling Network for Emerging Infections | Réseau une seule santé sur la modélisation des infections

OMNI-RÉUNIS Super-Spreader Seminar Series

This seminar series is intended to provide OMNI-RÉUNIS HQPs a platform to present their research, promote their ideas, share their research experiences, and establish connections among the various branches of the network.

**This seminar will be hosted via Zoom
 on Thursday, May 11, 2023, from 11:00-12:00 EST.**

[Register here and join us!](#)

SEMINAR 12 **DIGITAL DISEASE SURVEILLANCE SYSTEM USING THE INTERNET AND SOCIAL MEDIA DATA FOR COVID-19 FORECASTING IN CANADA**



PRESENTER- DR. YANG (RENA) YANG

Dr. Yang (Rena) Yang is a researcher with a multidisciplinary background in academia and industry in the fields of public health, health informatics, business management, information technology (IT), and computer engineering. She is currently a postdoctoral fellow in the School of Public Health Sciences at the University of Waterloo. As an academic researcher, Rena has expertise in applying statistical and machine learning techniques and leveraging algorithms to solve real-world problems in public health and healthcare.

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ABSTRACT

PRESENTER- DR. WANG (RENA) WANG

Emerging Infectious Diseases (EID) significantly threaten public health and economies worldwide. During epidemics, people increasingly rely on media, such as internet searches and social media, for health information. In this seminar, I will present our recent study investigating the potential of internet search engine queries and social media data as early warning signals for forecasting COVID-19 cases in Canada. We analyzed Google Trends and Twitter data at the beginning of the COVID-19 pandemic in Canada and used signal-processing techniques to remove noise. Our study conducted time-lagged cross-correlation analyses and developed a long short-term memory (LSTM)-based deep learning model to forecast daily COVID-19 cases. Our findings indicate that searching for symptom-related keywords correlates with COVID-19 incidence and peaks earlier than COVID-19 cases. I will discuss how these findings hold promise for creating a real-time surveillance system for COVID-19 forecasting and the remaining challenges in modelling.

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