JUDE KONG, York University

An AI-powered, integrated and user-friendly early warning, alert and response platform for disease outbreaks

Disease outbreaks are increasing both in terms of frequency and severity, in part due to accelerating human encroachment into natural landscapes, urbanization, globalization, and climate change. In response to the ever-present threat of disease outbreaks, the need for a comprehensive surveillance and response system has become paramount. In this talk, I will present some of our ongoing work on designing a community-oriented, climate-responsive, integrated, and user-friendly framework called AI-Epidemix for surveilling and managing infectious diseases while democratizing access to data science and machine learning techniques for non-experts. The framework is supported by AI, mathematical models, and a multi-source real-time data collection platform. It utilizes state-of-the-art AI and mathematical models to integrate and model both conventional (historical data, animal data, virus sequencingetc.) and unconventional data (such as Google Trends, Google Trends Rate, social media, satellite data, drug consumption in pharmacies, economic activity data and outdoor containers identified from Google Street View images) to detect possible diseases scenarios and corresponding interventions to suppress disease spread safely with minimal social impact.