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MONITORING AND MITIGATION OF PHYSICAL AND MENTAL HEALTH PROBLEMS IN HIGH DENSITY CITIES: AN INTERDISCIPLINARY APPROACH

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Rapid urban growth in high density cities has generated tremendous environmental and mental stress that threatens the physical and mental well-beings of the city residents. It in turn impacts on our health and productivity, as well as the sustainability of a city. Therefore, effective monitoring and mitigation of our environmental conditions and related health issues is of utmost importance for us to lead a smart and healthy living in our fast changing city landscapes. This research shows how social scientists can work together with the engineering and medical scientists to develop a holistic approach to the monitoring and mitigation of physical and mental health problems in high density living. Specifically we will demonstrate how air pollution can be monitored and analysed through an air pollution decision support system that integrates multi-source, multi-type and multi-scale data related to air pollution. We will show how public sentiments and opinions can be incorporated into the analysis framework to gauge the impact of air pollution on the society in general and people in particular. Furthermore, we will show how mobile devices and wearable's can be deployed to monitor our physical and mental states, and how a personalized health care advisory system can be developed to alleviate physical and mental stress. We will employ real-life examples solved by the research team in the Institute of Future Cities at The Chinese University of Hong Kong to substantiate our arguments.

Biography

Yee Leung is the Director of the Institute of Future Cities and Research Professor of the Department of Geography and Resource Management at The Chinese University of Hong Kong. He has done significant research in the probabilistic approach to uncertainty analysis in general and uncertainty propagation in geographical information systems in particular. He pioneers research in geographical analysis under fuzziness, and generalizes uncertainty analysis to various types of uncertainty using rough set theory, possibility theory, and theory of evidence. He also engages in novel research in climate dynamics, air quality analysis, spatial epidemiology, urban and regional analysis, intelligent spatial decision support systems, and spatial data mining and knowledge discovery.

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