International Workshop of Smart Infrastructure Development towards Smart City

Nov 20, 2021 ◆ China Shantou, Hong Kong ◆

Organizer: **Shantou University**
College of Engineering

The Hong Kong Polytechnic University
Faculty of Construction and Environment
Research Institute for Land and Space

Workshop Chair: **Prof. Shuilong SHEN**
Shantou University

Dr. Zhen-Yu YIN
The Hong Kong Polytechnic University

Secretary: **Dr. Pei WANG**
The Hong Kong Polytechnic University

Dr. Linshuang ZHAO, and **Dr. Ning ZHANG**
Shantou University

Zoom Room: https://umich.zoom.us/j/96248240760

Introduction

More than half of the world's population lives in cities. The increasing number of populations brings various problems to the outdated infrastructure and management systems of the cities. Smart city refers to the application of various information technologies or innovative concepts to integrate the city's management systems and services to improve the efficiency of resource utilization, optimize services, and the life quality of citizens. The purpose of this workshop is to further promote the theory and application of big data, cloud computing, blockchain, artificial intelligence and other technologies in city governance, and to exchange research results in new theories, problems, and methods in big data-related fields.

This workshop mainly focuses on Smart City and will exchange ideas on big data theory and technology, smart planning, urban digital transformation, and other related topics.

PROGRAM

Time	Title
8:40-9:00	**Opening speech (Prof. Shuilong SHEN)**
Session 1	**Chair: Dr. Linshuang ZHAO**
9:00-9:20	3D Geological Model for Singapore Prof. Jian CHU, NTU
9:20-9:40	Automatic Monitoring of Old Stonewalls and Large Trees in Hong Kong using PolyU Optical Fiber Sensing Technology and Real Cases Prof. Jian-Hua YIN, PolyU
9:40-10:00	Machine Learning of Subsurface Stratigraphy from Sparse Boreholes and Smart Geotechnical Site Investigation Prof. Yu WANG, CityU
10:00-10:20	Introduction of Interdiscipline of Smart City, Shantou University, Guangdong Province Prof. Shuilong SHEN, Shantou University
	Break
Session 2	**Chair: Dr. Pei WANG**
10:40-11:00	AI-powered Landslide Mapping and Prediction Prof. Limin ZHANG, HKUST
11:00-11:20	Peridynamic Simulation of Continuous Grain Crushing in Granular Media Prof. Jidong ZHAO, HKUST
11:20-11:40	Large-Scale Numerical Simulations on Site-City Interaction of Super-Tall Buildings Prof. Gang WANG, HKUST
11:40-12:00	Towards smart modeling of sands using X-ray micro-CT, DEM and machine learning Prof. Jianfeng WANG, CityU

	Lunch time
Session 3	**Chair: Dr. Ning ZHANG**
14:00-14:20	Elevated Cities - Cases of PolyU Campus and Hung Hom Green Deck Prof. Xiao-Li DING, PolyU
14:20-14:40	Deformation Prediction of Immersed Tunnel Prof. Wan-Huan ZHOU, MacauU
14:40-15:00	Deploying Battery Swap Stations for Shared Electric Vehicles Using Trajectory Data Dr. Chengxiang ZHUGE, PolyU
15:00-15:20	Practice of Optimisation Theory in Geotechnical Engineering Dr. Zhen-Yu YIN, PolyU
	Break
Session 4	**Chair: Dr. Pierre Guy Atangana Njock**
15:40-16:00	Contribution of Micromechanics and Machine-Learning to Modeling and Design of Smart Cement-Based Materials Prof. Jianfu SHAO, Université de Lille
16:00-16:20	Indicators of Instability in Granular Slopes Prof. Pierre-Yves Hicher, Ecole Centale de Nantes
16:20-16:40	Multiscale Approach in Rockfall and Snow Avalanche Mitigation Prof. Francois Nicot, Université Savoie Mont-Blanc
16:40-17:00	Particle Size Effect of Granular Materials in Biaxial Test with the Role of Particle Breakage Dr. Pei WANG, PolyU
17:00-17:10	**Closing remarks (Dr. Zhen-Yu YIN)**