

## Risk, resilience and sustainability informed integrity management of infrastructure systems

### Resilience and sustainability informed design and management for infrastructure systems

**Speaker: Prof. Min Ouyang, Huazhong University of Science and Technology**

**Time: 06th October, 2022 15:00 – 16:00 Beijing time**

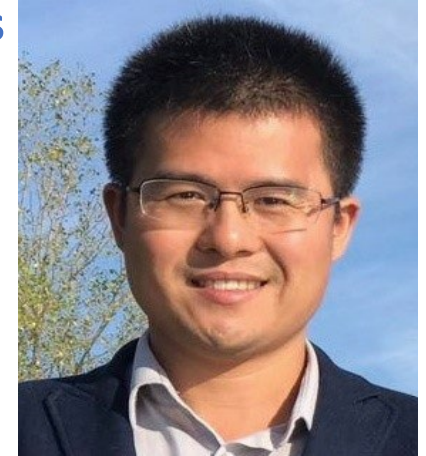
**Host: Dr. Jianjun Qin, Shanghai Jiao Tong University**

#### Lecture outline:

Cities almost never die, and many of them have existed for hundreds of years in the face of man-made and natural disasters, proving that the vast majority of cities have been remarkably resilient. However, in the context of rapid urbanization and global environmental change, cities might be at risk of cascading system failures, resulting in devastating losses due to emergence of new risks and increasing infrastructure interdependencies. Enhancing infrastructure and urban resilience is thus crucially important to support the sustainable development of cities. This presentation introduces a series of resilience enhancement models and their solution algorithms for urban infrastructure systems against natural hazards and worst-case disruptions, taking both the interdependency and uncertainty into account. The resilience patterns of nation-wide multi-mode transportation systems and urban road networks across all cities in mainland China have been also discussed in the face of localized disruptive events.

#### About the speaker:

Min Ouyang is currently a professor in School of Artificial Intelligence and Automation, Huazhong University of Science and Technology. He is served as an editorial board member of ASCE-Journal of Infrastructure Systems, Reliability Engineering & System Safety, and Resilience Findings. His research interests include critical infrastructure resilience, modeling and simulation of interdependent infrastructure, urban resilience, decision making for resilience enhancement under uncertainty, and urban science. Prof. Ouyang has published 50+ peer-reviewed journal papers, and his publications have been cited 4700+ times in Google Scholar, with the H-index of 28. He was among the “Most Cited Chinese Researchers” in the field of “Safety, Risk, Reliability and Quality” from 2014-2019, and among the world’s top 2% of scientists (a list released by Stanford University) in 2020 and 2021.



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