

CYBERINFRASTRUCTURE FRAMEWORK FOR SMART CIVIL INFRASTRUCTURE MONITORING

Speaker

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Abstract

Industry 4.0 (or Smart Factory) is an emerging paradigm for automation in the manufacturing industry. The paradigm shift is caused by the rapid advancements in cyberinfrastructure technology and computational science that include:

- Cyber Physical System where the physical systems are monitored with sensors and controlled with actuating devices
- Internet of Things and Services that connect and facilitate communication, cooperation among sensors, devices and humans
- Cloud Computing and Data Analytics that support information sharing and collaboration and enable on-demand diagnostic, prognostic and control functions

This presentation will discuss some of the recent technology developments and how they may be deployed for civil infrastructure monitoring. Specifically, the presentation will (1) discuss information modeling of bridge structures to enable information interoperability and to support structural modeling, engineering analyses and sensing and monitoring; (2) describe an implementation of a cyberinfrastructure structural health monitoring framework utilizing cloud computing platforms; and (3) discuss the deployment of a distributed cloud-based NoSQL database environment for efficient storage and retrieval of data. The scalable cyberinfrastructure framework is demonstrated for the monitoring of bridges along the I-275 Corridor located in the state of Michigan.

Biography

Prof. Kincho H. Law is currently Professor of Civil and Environmental Engineering at Stanford University. His research has been focused on the applications of computational and information sciences to civil and structural engineering. His work has dealt with various aspects of structural dynamics, structural health monitoring, wireless sensing and control, high performance computing, engineering and legal information management, engineering enterprise integration, web services and Internet computing. He has authored and co-authored over 400 articles in journals and conference proceedings and has received best research paper awards from ASCE, ASME, IEEE and Digital Government Society. He was the recipient of the ASCE Computing in Civil Engineering Award in 2011. Prof. Law has been elected as a Distinguished Member of the American Society of Civil Engineers in 2017.

* Collaborative works with Prof. Jerome P. Lynch of University of Michigan and Prof. Hoon Sohn of KAIST



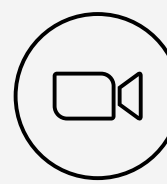
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10:30 am - 12:00 pm



Room 2465, Academic
Building, Floor 2
(Lift 25/26)



Zoom Link

Meeting ID: 914 6723 8305
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