



THE CHINESE UNIVERSITY OF HONG KONG
Department of Information Engineering
Seminar

Sensor Web: Connecting the Dots for Health and Security Monitoring

By

Prof. Wenzhan Song
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Date : 1 December 2023 (Friday)

Time : 3:30pm – 4:30pm

Venue : Rm 801, Ho Sin Hang Engineering Building, CUHK

Abstract

This talk introduces our recent research on sensor web for health and security monitoring based on AI, data science and networking technologies. In concern of cyber-physical security and health, we have created sensor web systems that utilize the spatio-temporal electrical signals in power networks, together with cyber signals, for the security and health monitoring of devices, machines and infrastructures. In response to the needs of remote patient monitoring, we have invented a series of seismic sensor web systems for human and animal health and security monitoring. For example, BedDot, attached underneath a bed, senses micro-seismograms from heartbeats and movements and estimates vital signs and activities. CageDot, placed under an animal cage, monitors animal activities and vital signs. For secure and trustworthy data management, we have designed a zero-trust and traceable data infrastructure for sensor web data storage and sharing based on web3 and blockchain.

Biography

Dr. WenZhan Song is Georgia Power Mickey A. Brown Professor in Computer Engineering and Founding Director of the Center for Cyber-Physical Systems (CCPS) at the University of Georgia. He also holds the courtesy appointment in UGA computer science and statistics. He is a world leading expert on pervasive sensing, computing, networking and security and has created and deployed various innovative sensor network systems for health, energy, environment and security monitoring. Dr. Song's research was featured in national media and received numerous awards and recognitions including NSF CAREER Award, Outstanding Research Contribution Award, Chancellor Research Excellence Award, IEEE Mark Weiser Best Paper Award, and three times Most Promising Technology awards from industry. Dr. Song served as General Chair, TPC member and Associate Editor of the most prestigious conferences and journals at computer science and engineering, including IEEE INFOCOM, IEEE PERCOM, IEEE Internet of Things, ACM Transaction on Sensor Networks. His research has been funded by numerous grants from the NSF, NASA, USGS, DOE, USDA, NIH, DOD and industry.

**** ALL ARE WELCOME ****