

Joint Design of Distributed Sensing and Transmission for Network Systems

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Abstract

Real-time and precise cooperative control of cyber-physical systems relies heavily on the interaction and integration of discrete information systems and continuous physical systems. Network is one of the key enabling ways to quantify the interdependence and reflect evolution of physical systems and information systems. This talk is concerned with the network architecture, reliable transmission and scheduling techniques for wireless control systems. The MicroRF Industrial Wireless Network Protocol Stack with Independent Intellectual Property is to be introduced as well as the related experimental platform and demonstrative applications of network based monitoring systems.

About the speaker...



Cailian Chen is currently a Full Professor of Department of Automation, Shanghai Jiao Tong University, Shanghai, P. R. China. She was a senior research associate in City University of Hong Kong (2006) and postdoctoral research associate in University of Manchester, U. K. (2006-2008). She was a Visiting Professor in University of Waterloo, Canada (September 2013-March 2014).

Prof. Chen's research interests include industrial Internet of Things, computational intelligence and distributed situation awareness, and Internet of Vehicles and applications in intelligent transportation. She has authored and/or coauthored 2 research monographs and over 100 referred international journal and conference papers. She is the inventor of more than 20 patents. Dr. Chen received the prestigious "IEEE Transactions on Fuzzy Systems Outstanding Paper Award" in 2008, and "Best Paper Award" of the conference WCSP 2017. She won

the First Prize of Natural Science Award twice from The Ministry of Education of China in 2006 and 2016, respectively, and awarded the First Prize of Technological Invention from Science and Technology Commission of Shanghai Municipality, China in 2017. She was honored "Changjiang Young Scholar" by Ministry of Education of China in 2015 and "Excellent Young Researcher" by NSF of China in 2016.

Prof. Chen has been actively involved in various professional services. She serves as Associate Editor of IEEE Transactions on Vehicular Technology, Peer-to-peer Networking and Applications (Springer), The World Scientific Journal: Computer Science, and ISRN Sensor Networks. She also served as Guest Editor of IEEE Transactions on Vehicular Technology, Symposium TPC Co-chair of IEEE Globecom 2016 and VTC2016-fall, Workshop Co-chair of WiOpt'18, and TPC member of many flagship conferences including IEEE Globecom, IEEE ICC, IEEE VTC, ICCVE and IEEE WCCI.