



## 泛在计算系统研究中心学术报告会

报告题目: Dependable Wireless Control through Cyber-Physical Co-Design

时间: 2017年6月27日(周二)下午2:30—4:00

地点: 计算所748会议室

报告人: Prof. Chenyang Lu, 美国圣路易斯华盛顿大学

摘要:



Industrial wireless control systems are the new frontier of cyber-physical systems. While the adoption of industrial wireless standards has demonstrated the promise of wireless sensor-actuator networks in industrial environments, there remain daunting challenges in developing control systems that are dependable over wireless networks due to communication delays, data losses and resource constraints in such networks. In contrast to traditional approaches of designing wireless and control subsystems in isolation, we need a cyber-physical co-design approach that co-joins wireless and control designs to overcome the limitations of wireless communication. This talk will present recent advances toward dependable wireless control systems: (1) real-time wireless sensor-actuator networks with delay guarantees; (2) control-aware wireless network design; (3) realistic case studies of industrial control systems through holistic wireless

cyber-physical simulations. The talk will further highlight research challenges and opportunities in the exciting area of industrial wireless sensor-actuator networks.

### 报告人简介:

Chenyang Lu is the Fullgraf Professor in the Department of Computer Science and Engineering at Washington University in St. Louis. His research interests include real-time systems, wireless sensor networks, cyber-physical systems and Internet of Things. He is Editor-in-Chief of ACM Transactions on Sensor Networks, Area Editor of IEEE Internet of Things Journal and Associate Editor of the new ACM Transactions on Cyber-Physical Systems and the Real-Time Systems Journal. He also chaired premier conferences such as IEEE Real-Time Systems Symposium (RTSS), ACM/IEEE International Conference on Cyber-Physical Systems (ICCPS) and ACM Conference on Embedded Networked Sensor Systems (SenSys). He is the author and co-author of over 150 research papers with over 16,000 citations and an h-index of 56. He received the Ph.D. degree from University of Virginia in 2001, the M.S. degree from Chinese Academy of Sciences in 1997, and the B.S. degree from University of Science and Technology of China in 1995. He is a Fellow of IEEE.