



Department of
Computer Science

香港城市大學
City University of Hong Kong

COMPUTER SCIENCE COLLOQUIUM

Wireless Security for the Internet of Things: Device Authentication and Key Generation

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TIME 10:00 AM - 11:00 AM

VENUE Y6405, Yellow Zone, Yeung Kin Man
Academic Building, City University of
Hong Kong, Kowloon Tong, Hong Kong

ABSTRACT

This talk will give a comprehensive introduction to our recent research on wireless security for the Internet of things (IoT) such as WiFi, LoRa, Zigbee, etc. In the first part, we will talk about device authentication based on radio frequency fingerprint identification (RFFI), which is an emerging technique that exploits hardware impairments for device authentication. We will elaborate on how deep learning is leveraged to enhance RFFI performance. In the second part, we will introduce key generation from wireless channels, which is a good alternative to public key cryptography for establishing cryptographic keys between IoT devices. Our research findings on experimental evaluation with practical wireless standards including WiFi and LoRa will be presented.

BIOGRAPHY

Dr. Junqing Zhang is a Senior Lecturer (Associate Professor) with the University of Liverpool, UK. He received a Ph.D degree in Electronics and Electrical Engineering from Queen's University Belfast, UK in 2016. His research interests include the Internet of Things, wireless security, key generation, radio frequency fingerprint identification and wireless sensing. His work mainly involves designing innovative and practical physical layer security solutions for future wireless technologies with ultra-low energy requirements but high security standards. He was a recipient of the EPSRC New Investigator Award.

All are welcome!



In case of questions, please contact Prof XU Weitao at weitaoxu@cityu.edu.hk, or visit the CS Departmental Seminar Web at <https://www.cs.cityu.edu.hk/events/cs-seminars/recent-cs-colloquiums>.