



Department of
Computer Science

香港城市大學
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COMPUTER SCIENCE COLLOQUIUM

Impact of reconfigurable intelligent surfaces on physical layer key generation in NextG wireless networks

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DATE 26 Mar, 2024 (Tue)

TIME 10:00 AM - 11:00 AM

VENUE YEUNG-G7315, Green Zone Yeung Kin
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ABSTRACT

Physical layer key generation (PKG) is a promising means to provide on-the-fly shared secret keys by exploiting the intrinsic randomness of the radio channel. However, the performance of PKG is highly dependent on the wireless propagation environment. Due to its feature of controlling the wireless environment, reconfigurable intelligent surface (RIS) is appealing to be applied in PKG. In this talk, we will explore the effects of RIS on PKG from both constructive and destructive perspectives. On one hand, static and wave-blockage environments are two RIS-empowered-PKG applications in future wireless systems. On the other hand, RIS could also be utilized by an attacker to perform new jamming and leakage attacks. At last, possible directions for future research will also be given.

BIOGRAPHY

Guyue Li received the B.S. degree in 2011 and the Ph.D. degree in information security in 2017 from Southeast University, Nanjing, China. In 2014, she was sponsored by the FP7 project to visit Tampere University of Technology, and in 2019, she was supported by the Sino-French Cai Yuanpei Program for a short-term visit to Université Gustave Eiffel Noisy-le-Grand, France (ESIEE PARIS). She is currently an Associate Professor with the School of Cyber Science and Engineering, Southeast University, where she also acts as a Ph.D. supervisor and director of the Information Security Department. Her current research focuses on physical layer security, wireless communication security, and Internet of Things (IoT) security. She has received Young Scientist Awarded by the International Union of Radio Science (URSI) in 2022, the Youth Science and Technology Prize of Jiangsu Cyber Security Association in 2022, the A-Level Zhishan Scholar of Southeast University, the Outstanding Teaching Award of Southeast University, Outstanding Supervisor Award in the 14th National College Student Information Security Contest of China, Outstanding Supervisor Award for Professional Master's Graduate Thesis in Jiangsu Province, and Supervisor for the First Prize of Outstanding Undergraduate Thesis in Jiangsu Province. She serves as an Editor of IEEE Communication Letters, an Associate Editor of EURASIP Journal on Wireless Communications and Networking, and Workshop Co-Chair of the IEEE VTC2021-Fall, 2022-Fall, and 2023-Fall.

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>.