



學術報告

BDD Bypassing Attacks and Their Improved Detection in Railway Traction Power System



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时间: 1月11日 星期四 上午 10:00

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Biography: David Yau obtained the B.Sc. from the Chinese University of Hong Kong, and M.S. and Ph.D. from the University of Texas at Austin, all in computer science. He is now Professor in the Information Systems Technology and Design pillar of the Singapore University of Technology and Design. Since 2010, he has been Distinguished Scientist at the Advanced Digital Sciences Center, Singapore. He is also Qiushi Chaired Professor in the Department of Control, Zhejiang University, China. David's research interests are in network protocol design and implementation, network and cyber-physical system security and privacy, quality of service (QoS), network incentives, and wireless sensor networks. He received an IBM Fellowship and a CAREER award from the U.S. National Science Foundation. His research has been funded by MINDEF, A*Star, NRF, and EMA in Singapore; by NSF, DOE, ONR, IBM, and the Indiana 21st Century Research and Technology Fund in the U.S.; by the National Natural Science Foundation of China; and by the Korea Electronics Technology Institute. He has served as panelist and reviewer for U.S. NSF, DOE, and ONR, as well as several international funding agencies.

Traction power system is widely deployed in modern electrified railways. It integrates cyber ICT with a mission critical physical system that in turn consists of two intertwined components of motion and traction power flows. I will discuss stealthy attacks against the TPS in the sense that they bypass BDD. Then I'll discuss hardened detection methods for the BDD bypassing attacks.