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THE CHINESE UNIVERSITY OF HONG KONG

Department of Information Engineering

Seminar

Towards Practical Authentication over Earbuds using Multi-modal Inference

By

Prof. Tianxing LI

Michigan State University, USA

Date : 30 May 2024 (Thursday)

Time : 2:00pm – 3:00pm

Venue : Rm 801, Ho Sin Hang Engineering Building, CUHK

Abstract

Recent years have shown substantial interest in revealing vulnerability issues of voice-controllable systems on smartphones and smart speakers. While prior works have proposed various authentication systems to defend against these attacks on large mobile devices (e.g., smartphones, smart speakers), smart earables present unique challenges and vulnerabilities due to their extreme hardware constraints. In addition, if someone misuses so-called Audio Deepfake technologies for malicious purposes, these voice-controllable devices may seriously threaten social security and the political economy. Having this in mind, my talk will first dive into understanding the unique vulnerabilities in today's smart earbles. In response to these vulnerabilities, I will discuss several authentication systems on earables to distinguish authenticated and malicious users.

Biography

Tianxing Li is an Assistant Professor in the Computer Science and Engineering Department at Michigan State University (MSU). Prior to MSU, he was a Post-doc in the Computer Science Department at UMASS Amherst. He received Ph.D. in Computer Science at Dartmouth College in 2020. He earned M.S. at Dartmouth College in 2014 and B.E. with honor from Australian National University in 2012. His research interests are in wireless sensing, mobile security, and low-power systems. Specifically, his recent work focuses on designing practical and secure mobile systems. His work won the Best Paper Award at PerCom 2023, SIGMOBILE Research Highlights in 2016, 2018, and 2021, CACM Research Highlights in 2018, and was selected as a Best Paper Nominee at SenSys 2017.

**** ALL ARE WELCOME ****

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