THE CHINESE UNIVERSITY OF HONG KONG
Department of Information Engineering
Seminar

Wireless AI: WiFi Sensing from Principles to Products
by
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Date   : **17 December 2021 (Friday)**
Time   : **11:00am**
Venue : **Room 801, Ho Sin Hang Engineering Building**
          The Chinese University of Hong Kong

Abstract

We are rapidly moving towards a ubiquitously connected, interactive world of AIoT, where pervasive sensing is highly demanded to bridge the cyber and physical space. Today's computers, despite their powerful computing and networking capabilities, still lack effective sensing of the physical world to make possible revolutionary applications for smart homes, digital health, autonomous vehicles, cybersecurity.
This talk will focus on wireless AI for seamless, high-precision sensing and tracking for smart homes, healthcare, cars, and beyond. I will introduce how we unleash the incredible potentials of pervasive wireless signals (such as WiFi) for a wide range of sensing applications, including home security, sleep monitoring, fall detection, gait recognition, all in a contactless and sensorless way without cameras or wearables, which have been commercialized as award-winning products. I will then present a large-scale, decimeter-level indoor tracking system using a single commodity WiFi Access Point, which is easy to install and can support an unlimited number of clients just like GPS does. The prototype system has been demoed at big companies like Apple, Qualcomm, HP, etc. I will conclude the talk with future directions towards advanced wireless AI for intelligent cyber-physical perception and interaction.

Biography

Chenshu Wu is an Assistant Professor in the Department of Computer Science, The University of Hong Kong, where he leads the HKU AIoT Lab. He is also the Chief Scientist at Origin Wireless Inc., a spotlight wireless sensing company. His research focuses on wireless AIoT systems at the intersection of wireless sensing, ubiquitous computing, and the Internet of Things. He has published 3 books, 70+ papers in prestigious conferences and journals (such as SIGCOMM, NSDI, MobiCom, MobiSys, UbiComp, TMC, JSAC, TPDS, etc.), and 40+ filed/granted patents. His research has been commercialized as award-winning products, including LinkSys Aware that received the CES 2020 Innovation Award, HEX Home that won CES 2021 Innovation Award, and Origin Health Remote Patient Monitoring that won CES 2021 Best of Innovation Award. He received his B.S. and Ph.D. degree both from Tsinghua University. More information at https://cswu.me

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