Department of Computer Science
香港城市大學
City University of Hong Kong

COMPUTER SCIENCE COLLOQUIUM

Remote Delivery of Microwave Power in Robotic Systems

SPEAKER **Yiwen Song**

Ph.D. student
Electrical and Computer Engineering,
Carnegie Mellon University

DATE 4 Jun, 2025 (Wed)
TIME 10:30 AM - 12:00 PM
VENUE CS Seminar Room, Y6405, 6th Floor, Yellow Zone, Yeung Kin Man Academic Building, City University of Hong Kong, 83 Tat Chee Avenue, Kowloon Tong

ABSTRACT

Microwave is an electromagnetic wave that has the capability to penetrate through certain occlusions. In this talk, I will present our work on accurate delivery of high microwave power and their application in robotics systems. I will first show a passive metasurface that guides kilowatt microwave power inside microwave ovens. I will then show our series of work on channel information estimation, hardware design, and fabrication, that are designed for accurately delivering microwave power to drive thermal-responsive soft robots. At last, I will talk about how we plan to improve and utilize the high microwave power delivery system to benefit future on-body and in-body soft robotic systems.

BIOGRAPHY

Yiwen Song is a fourth-year Ph.D. student at the ECE department of Carnegie Mellon University. His advisor is Swarun Kumar. His work mainly focuses on accurately and efficiently delivering wireless power remotely, where his detailed work spans through designing frontend hardwares, fabrication techniques, and algorithms for sensing and communication. He has published 10+ papers in top-tier conferences and journals such as MobiCom, MobiHoc, ICRA, etc, and his work has been featured as S3 best poster and ACM GetMobile Research Highlight.

All are welcome!

In case of questions, please contact Prof. LI Zhenjiang at zhenjiang.li@cityu.edu.hk, or visit the CS Departmental Seminar Web at https://www.cs.cityu.edu.hk/events/cs-seminars/recent-cs-colloquiums.