



Department of Computer Science

Investigate and Mitigate the Attacks Caused by Out-of-Band Signals

Xiali (Sharon) Hei
University of Louisiana at Lafayette

Hosted by Reza Curtmola

Date: Wednesday, May 8, 2024
Coffee: 2:15 PM – 2:30 PM
Time: 2:30 PM – 3:30 PM
Location: GITC 4402 (4th floor Seminar Lecture Hall)
WebEx Link: <https://njit.webex.com/njit/j.php?MTID=m2a59d2ada1a274a2a1bf10dd0885c4b3>

Abstract:

Sensing and actuation systems are entrusted with increasing intelligence to perceive the environment and react to it. Their reliability often relies on the trustworthiness of sensors. As process automation and robotics keep evolving, sensing methods such as pressure/temperature/motion sensing are extensively used in conventional systems and rapidly emerging applications. This talk aims to investigate the threats incurred by the out-of-band signals and discuss the low-cost defense methods against physical injection attacks on sensors. Dr. Hei will present the results from her USENIX Security, ACM CCS, AsiaCCS, SecTL, CPSIoTSec, and SmartSP papers

BIO:

Xiali (Sharon) Hei is an Alfred and Helen M. Lamson Endowed associate professor in the School of Computing and Informatics at the University of Louisiana at Lafayette since August, 2023. She is also a visiting associate professor at the University of Pennsylvania. She was an Alfred and Helen M. Lamson Endowed assistant professor in the School of Computing and Informatics at the University of Louisiana at Lafayette from August 2017 to July 2023. Prior to joining the University of Louisiana at Lafayette, she was an assistant professor at Delaware State University from 2015-2017 and an assistant professor at Frostburg State University from 2014-2015.

She was awarded Alfred and Helen M. Lamson Endowed Professorship, an Outstanding Achievement Award in Externally Funded Research, an NSF Track 4 Faculty Fellowship, an NSF SaTC Small award, an NSF MRI award, a Meta (Facebook) research award, an NSF ERSCoR RII Track 1 award, an NSF CRII award, an LA BoRSF CEMC Talent Initiative Fund, an LA BoRSF Seed fund, and a Delaware DEDO grant, EAI SmartSP 2023 Best paper award, ACM 2014 MobiHoc Best Poster Runner-up Award, Dissertation Completion Fellowship, The Bronze Award Best Graduate Project in Future of Computing Competition, IEEE INFOCOM, and IEEE GLOBECOM student travel grant, etc. Also, she earned an M.S. in Software Engineering from Tsinghua University and a B.S. in Electrical Engineering from Xi'an Jiaotong University. Her papers were published at IEEE Symp. on Security and Privacy, USENIX Security Symp., ACM CCS, IEEE INFOCOM, IEEE Euro S&P, RAID, ASIACCS, etc. She is a TPC member of the USENIX Security Symp., IEEE EuroS&P, PEST, SafeThings, AutoSec, etc.