



Safeguarding the Web3 Fintech Ecosystem Across the Full Stack

by
Prof. Daoyuan Wu
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Date : 2 April 2026 (Thursday)

Time : 3:30 pm – 5:00 pm

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

Abstract

The emergence of Web3 is reshaping the Fintech landscape by enabling decentralized, trustless value transfer at scale. However, this paradigm shift also introduces new security challenges across multiple layers—from blockchain protocols and smart contract libraries to application-level logic and transaction monitoring. In this talk, I will provide a comprehensive overview of the Web3 security landscape, highlighting empirical studies on system-level blockchain vulnerabilities [FSE'22] and the propagation of bugs in forked chains [NDSS'23]. I will also discuss our latest research on detecting misuse and vulnerabilities in widely adopted smart contract libraries such as OpenZeppelin [USENIX'24 & ASE'25], as well as the role of LLMs in enhancing vulnerability reasoning [ICSE'24], automated auditing [ICSE'25], and formal verification [NDSS'25 Distinguished Paper]. Finally, I will outline emerging research directions, including LLM-based transaction analysis and cross-module verification, aimed at achieving a more secure and resilient Web3 ecosystem.

Biography

Daoyuan Wu is currently an Assistant Professor at the School of Data Science, Lingnan University, where he leads the AIS2Lab (Artificial Intelligence and Systems Security Lab). Prior to joining LU, Dr. Wu was a Research Assistant Professor (RAP) at HKUST CSE and CUHK IE, as well as a Senior Researcher at NTU and Huawei HK. Dr. Wu has published over 30 CCF-A conference papers and 7 CCF-A journal articles, including a Distinguished Paper Award at NDSS 2025. He has been the PI for the Stellar Academic Research Award, CCF-Huawei, and several UGC funds, as well as a Co-PI for a CRF project.

**** ALL ARE WELCOME ****