香港浸會大學 HONG KONG BAPTIST UNIVERSITY

DEPARTMENT OF COMPUTER SCIENCE 計算機科學系

DEPARTMENT OF COMPUTER SCIENCE

SEMINAR

2026 SERIES

Economic Security in Decentralized Systems and Beyond

DATE & TIME

22 APR 2026 (Wed) 11:00 AM - 12:00 PM

VENUE

DLB637, 6/F, DAVID C. LAM BUILDING, SHAW CAMPUS

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ABSTRACT

Public blockchains like Bitcoin and Ethereum underpin today's multi-trillion-dollar economy. Blockchain is a native asset- management system, where its security directly impacts financial risks and is critical for asset owners. The interplay between cybersecurity and economics in blockchain systems introduces distinct technical challenges and opens up new design opportunities.

Our recent research tackles these challenges by discovering, understanding, and mitigating "economic design flaws" with provable security across blockchains' infrastructure and application layers. At the infrastructure layer, we uncover cost-asymmetric denial-of-service vulnerabilities in Ethereum's transaction admission-control subsystems, including mempools (CCS'21) and RPC services (NDSS'21). We advanced the field with semantic fuzzing for automated vulnerability discovery (USENIX Security'24) and provably secure defenses (IEEE S&P'25), with code patches integrated into Ethereum clients. At the application layer, we investigated financial risks, uncovering unfair trades and flaws in compositional smart contracts (Euro S&P'23) and analyzing on-blockchain misuses of leaked private keys (WWW'24).

SPEAKER'S BIOGRAPHY

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