Title: Blockchain-based Community Corroboration for Zero Trust Architectures and Systems

Speaker: Zhixiong Chen, Professor, Mercy College

Abstract:
In this paper, we propose a new concept of Community Corroboration that uses blockchain technology for building web-based zero trust architectures and systems. Community Corroboration grants digital communities or tribes to use community verifiable Portfolio Artifacts to build mutual trust gradually, assess and verify claims intermittently, and assign or delegate tasks among communities on demand. It adds subject-awareness to the context of trust parties for identification, authentication, and authorization. We demonstrate our portfolio artifact service system (PASS+) to model and implement Community Corroboration for the zero trust architectures and systems. Portfolio Artifacts (PAs) are building blocks to identify human beings holistically as well as non-human entities such as social bots and malicious software that can be characterized by digitally identifiable features. PAs are subject to external validation and internal verification and assessment. We use the blockchain technology as the infrastructure for PASS+, and PAs are stored in blocks via smart contracts. Initial results demonstrate the viability and advantages of our proposed solution.
This position paper is to address the notion that the immutability from blockchain is not enough for building trust, and we need to adopt a new holistic approach that can leverage the advantages of both permissioned and permissionless strategies in order to build a hybrid-mode blockchain infrastructure for developing zero-trust web-based systems through both verifications and community corroboration.

Bio: