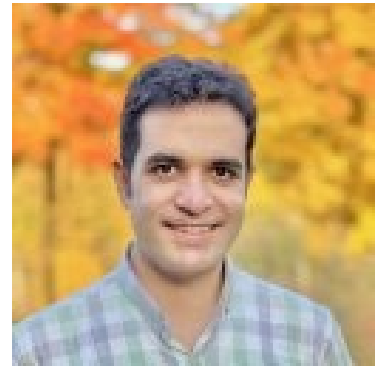# DATA SCIENCE TT FACULTY CANDIDATE 2023

Mohammad Amiri, Ph.D.

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Computer & Information Science
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Thursday, March 30, 2023 @ 11:00AM EST
Unity Hall 400

Title: Large-Scale Collaborative Data Management in Untrusted Environments

Abstract: Today's large-scale data management systems need to address distributed applications' confidentiality and scalability requirements among a set of mutually distrustful collaborative enterprises. On the one hand, emerging distributed applications, e.g., supply chain management and multi-platform crowdworking, require collaboration between distributed enterprises to process a mix of public and private transactions. On the other hand, distributed applications need to scalably process a large number of transactions within or across enterprises. My research addresses these requirements by bridging large-scale data management and distributed fault-tolerant systems. In this talk, I first discuss Qanaat to address confidentiality and then present SharPer, a flattened sharding protocol to manage large-scale data. The talk concludes with several future directions on leveraging privacy-preserving, resource disaggregation and reinforcement learning techniques to address large-scale data management systems' verifiability and adaptivity requirements.

Bio: Mohammad Javad Amiri is a postdoctoral researcher in the Computer and Information Science department at the University of Pennsylvania, where he is working with Prof. Boon Thau Loo. At Penn, he is a member of the NetDB research group, distributed systems lab, and database group. Before joining Penn, he received his Ph.D. in Computer Science at the University of California, Santa Barbara, under the supervision of Prof. Divyakant Agrawal and Prof. Amr El Abbadi. His research mainly lies at the intersection of large-scale data management and distributed fault-tolerant systems, focusing on distributed transaction processing, consensus protocols, and blockchains. His work has appeared at premier conferences such as VLDB, SIGMOD, WWW, FSE, and ICDE.

Host: Prof. Elke Rundensteiner, Data Science/Computer Science