Research Colloquium
Department of Computer Science

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will speak on:

Access Control Management in Information Systems Integration: Beyond Network Security in Cyber-Defense

11:00 a.m. on Monday, February 20 in Houser 108

Information sharing and integration is a cornerstone of the national cybersecurity infrastructure. At the heart of this infrastructure is the federated database system connecting several heterogeneous information sources. In the context of cyber-defense, this information infrastructure poses as grave a security risk as the physical network itself. An unpleasant reminder to this effect was seen in the most dreadful worm in computer history (sqlserver worm) that targeted highly connected database systems across the world. To provide seamless connectivity while also ensure security of information resources is therefore the major challenge for federated collaboration. Toward this end, this talk will investigate and address some of the key access control challenges related to federated information sharing. The primary contribution of this work is the design of a policy-engineering framework, called X-FEDERATE, for specification and enforcement of access management policies in federated systems. The framework includes a policy specification language designed to capture the requirements for federated information sharing, and a policy engineering methodology based on software engineering principles to allow standardized policy development and integration in federated systems. It also includes the design of an administrative model targeted at access control policy administration in a decentralized environment. The X-FEDERATE framework has been applied for secure Web-based federation in several application domains, such as federated libraries and federated healthcare management.