

2019 Tennessee Tech College of Engineering New Faculty Research Seminar Series

Secure Cloud Assisted Smart Cars

Presented by Maanak Gupta Ph.D., Assistant Professor, Computer Science

Abstract: Smart cars are among the essential components and major drivers of future cities and connected world. The interaction among connected entities in this vehicular internet of things domain, which also involves smart traffic infrastructure, restaurant beacons, emergency vehicles, etc., will offer many real-time service applications and provide safer and more pleasant driving experience to consumers. Security and privacy are big concerns that deter the adoption of smart cars, which if not properly addressed will have grave implications with risk to human life and limb. In this talk, Gupta will first highlight the access control needs in smart cars ecosystem and present an access control-oriented architecture. Furthermore, he will discuss the proposed dynamic groups and attribute-based access control model for smart cars ecosystem, which considers both system wide attributes-based security policies and individual user privacy preferences for allowing or denying service notifications, alerts and operations to on-board resources. In the end, Gupta will briefly discuss a proof of concept implementation in AWS IoT cloud platform.

About the Speaker: Maanak Gupta received his Ph.D. in Computer Science from the University of Texas at San Antonio (UTSA) and worked as Postdoctoral Fellow at the Institute for Cyber Security, UTSA. His primary area of research includes security and privacy in cyber space, particularly scientific foundational aspects of access control and applications for Smart Cars, Internet of Things, Cloud Computing, Blockchain and Big Data. He has regularly published in ACM SIGSAC conferences. He has also secured several grants and scholarships from premier cyber security conferences. He is a member of IEEE, ACM, IFIP WG 11.3 Working Group on Data and Applications Security and Privacy, and IOT Council European Union and serves as a reviewer and program committee member of several national conferences.

**Wednesday, Oct. 30 2019, 3:30-4:30 p.m.
Prescott Hall, Room 225**

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