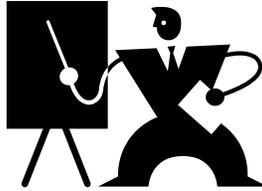


William Paterson University
Department of Computer Science

COMPUTER SCIENCE LECTURE SERIES



***A Scalable and Secure Key Distribution Scheme for Group Signature
based Authentication in VANET***

October 19, 2017 (Thursday), 3:30 PM – 4:30 PM
Science Hall West 301

Dr. Kiho Lim (University of South Dakota)

Abstract: Vehicular Ad hoc Networks (VANET) is a special type of Mobile Ad hoc Networks (MANETs) with unique characteristics such as fast-moving vehicular nodes, dynamically changing topology, and tiny interaction time between vehicular nodes. Vehicular nodes are equipped with the communication and computation devices to store, compute and transmit the information collected from the roads. The road side infrastructures are deployed to provide extensive coverage of the services to vehicular nodes. VANETs support various types of applications related to safety messages, traffic management, and infotainment services. The security in Vehicular Ad hoc Networks (VANETs) has become a huge concern to safeguard increasing applications. A group signature is one of the popular authentication approaches for VANETs which can be implemented to secure the VANET communication. However, securely distributing group keys to fast-moving vehicular nodes is still a challenging problem. In this talk, I present an efficient key management protocol for group signature based authentication, where a group is extended to a domain with multiple road side units. The scheme not only provides a secure way to deliver group keys to vehicular nodes, but also ensures security features. The experiment results show that our key distribution scheme is a scalable, efficient and secure solution to vehicular networking.

Biography: Dr. Kiho Lim is an Assistant Professor in the Department of Computer Science at the University of South Dakota. He received his M.S. and Ph.D. degrees in Computer Science from the University of Kentucky. His research interests are Vehicular Networks, Mobile Networks, Wireless Communication, and Network Security. He is currently leading a research group developing secure protocols for V2V(vehicle-to-vehicle) communication. He is also developing an ADAS authentication mechanism for vehicular communication on a joint project with Ford Motor Company.

All are welcome. For further information, please contact Dr. Weihua Liu (ext. 2517), LiuW3@wpunj.edu.