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Center for Networked Computing
Department of Computer and Information Sciences

A Novel Authentication Framework with Conditional Privacy-preservation and Non-repudiation for VANETs

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Abstract: As a part of security services, authentication services are crucial for the vehicular ad hoc networks (VANETs), which are more and more widely used for many practical applications such as traffic information systems. In this talk, we will identify the security requirements and possible attacks on authentication, vehicle privacy, and non-repudiation for VANETs. Then we will present a novel Authentication framework with Conditional Privacy-preservation and Non-repudiation (ACPN) for VANETs by using the Identity-Based digital Signature (IBS) scheme. We will also show security analysis and the efficiency of the proposed schemes through careful system evaluation.

Bio: Jie Li received the B.E. degree in computer science from Zhejiang University, Hangzhou, China, the M.E. degree in electronic engineering and communication systems from China Academy of Posts and Telecommunications, Beijing, China. He received the Dr. Eng. degree from the University of Electro-Communications, Tokyo, Japan. He is with Faculty of Engineering, Information and Systems, University of Tsukuba, Japan, where he is a Professor. His current research interests are in mobile distributed computing and networking, big data and cloud computing, network security, OS, modeling and performance evaluation of information systems. He was a visiting Professor in Yale University, USA, Inria Sophia Antipolis, France and Inria Grenoble – Rhone-Aples, France. He is a senior member of IEEE and ACM and a member of IPSJ (Information Processing Society of Japan). He is the Chair of Technical Sub-Committee on Big Data (TSCBD), IEEE Communications Society. He has served as a secretary for Study Group on System Evaluation of IPSJ and on several editorial boards for the international Journals, and on Steering Committees of the SIG of System EVAluation (EVA) of IPSJ, the SIG of DataBase System (DBS) of IPSJ, and the SIG of MoBiLe computing and ubiquitous communications of IPSJ. He has also served on the program committees for several international conferences such as IEEE INFOCOM, IEEE GLOBECOM, and IEEE MASS.