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# 学术报告会

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## Fog Computing and Its Application for Vehicular Content Disseminations

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**Abstract:**
Fog computing is an emerging networking frontier which is proposed in 2000 and promoted by Cisco in 2012. In this talk, we will give an brief introduction to the fog computing paradigm, and demonstrate its application in vehicular content dissemination applications. In specific, we will present the design of a fog computing communication infrastructure which enables the localized vehicular content dissemination in city. The developed fog computing infrastructure is composed of distributed fog computer servers, where each fog server is a lightweight cloud-like virtualized system with limited buffer storage and is able to transmit wirelessly the cached contents to fast-moving vehicles. To enable the distributed fog servers working toward the global optimal performance (e.g., minimal average file download delays), a fully distributed algorithm to determine optimally the content replication strategy is presented. Using extensive simulations, we validate the effectiveness of the fog computing infrastructure and show that the proposed distributed protocol can approach to the optimal content dissemination performance and can significantly outperform the traditional heuristics.

**Bio:**
Dr. Tom H. Luan received the B.Sc. degree from Xi'an Jiaotong University, China, in 2004, the M.Phil. degree from Hong Kong University of Science and Technology in 2007, and the Ph.D. degree from the University of Waterloo in 2012. Since December 2013, he has been the Lecturer in Mobile and Apps at the School of Information Technology, Deakin University, Melbourne Burwood, Australia. Dr. Luan's research mainly focuses on the vehicular networking, mobile content distribution, fog computing, and mobile cloud computing. He has published around 50 technical papers in international journals and conferences, including Transactions on Mobile Computing, Transactions on Networking and Infocom.