

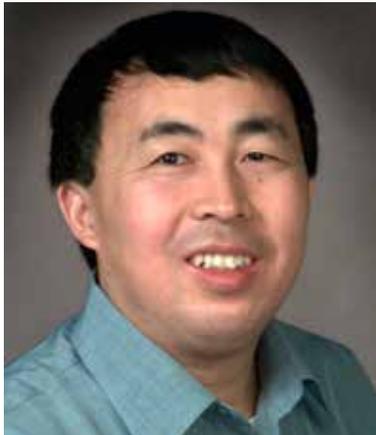
# ISTeC

The Information Science and Technology Center



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Colorado State University's  
Information Science and Technology Center (ISTeC)  
*presents two lectures by*

## Xuemin (Sherman) Shen

Professor and University Research Chair,  
Department of Electrical and Computer  
Engineering, University of Waterloo, Canada

### ISTeC Distinguished Lecture

In conjunction with the Computer Science Department and  
Electrical and Computer Engineering Department

#### *"Wireless Body Area Network and Remote Healthcare System"*

Monday, November 17, 2014  
Reception with refreshments: 10:30 am  
Lecture: 11:00 am – 12:00 noon  
Location: Morgan Event Hall



Computer Science Department and Electrical and Computer  
Engineering Department Special Seminar Sponsored by ISTE C

#### *"Vehicular Communications Networks - Design and Applications"*

Monday, November 17, 2014  
Lecture: 3:00 – 4:00 pm  
Location: Engineering Building B3

ISTeC (Information Science and Technology Center) is a university-wide organization for promoting, facilitating, and enhancing CSU's research, education, and outreach activities pertaining to the design and innovative application of computer, communication, and information systems. For more information please see [ISTeC.ColoState.EDU](http://ISTeC.ColoState.EDU).

## **Abstracts**

### ***Wireless Body Area Network and Remote Healthcare System***

Healthcare is becoming a serious social issue due to the increasing aging population, doctor shortages, and rising costs. Remote Healthcare System (RHS) based on wireless body area network (WBAN) has attracted significant attention recently since it not only cares for onsite patients, but also extends these benefits to anyone demanding healthcare beyond medical facilities. In addition, it can act as a dedicated virtual doctor and nurse, providing healthcare anywhere, around-the-clock with low cost. In other words, RHS can provide enhanced health care services with low cost. In this talk, we will present the WBAN in terms of emerging technologies, challenge design issues, and its application to Remote Healthcare System.

### ***Vehicular Communications Networks - Design and Applications***

The pervasive adoption of IEEE 802.11 radios in the past decade has made possible for the easy Internet access from a vehicle, notably drive-thru Internet. However, originally designed for the static indoor applications, the performance of IEEE 802.11 in the outdoor vehicular environment is still unclear especially when a large number of fast-moving users transmitting simultaneously. In this talk, we first introduce the Vehicular Communications Networks (VANET), its applications and design issues. We then discuss on the throughput performance of medium access control (MAC) in-motion drive-thru Internet scenario. Due to the high mobility and transient connectivity of vehicles, we show that the DCF MAC should be adaptively adjusted according to the vehicle velocities for improving throughput performance. We then describe the adaptive mechanisms to achieve smooth video delivery to passengers based on the Interrupted and variable download throughput of vehicles.

## **Speaker Biography**

Xuemin (Sherman) Shen is a Professor and University Research Chair, Department of Electrical and Computer Engineering, University of Waterloo, Canada. Dr. Shen's research focuses on wireless resource management, wireless network security, wireless body area networks, smart grid and vehicular ad hoc and sensor networks. He is the Editor-in-Chief of IEEE Network, Peer-to-Peer Networking and Application, and IET Communications. He served as the Technical Program Committee Chair for IEEE Infocom'14, IEEE VTC'10, the Symposia Chair for IEEE ICC'10, the Tutorial Chair for IEEE ICC'08, the Technical Program Committee Chair for IEEE Globecom'07, the Chair for IEEE Communications Society Technical Committee on Wireless Communications. He also served as a Founding Area Editor for IEEE Transactions on Wireless Communications; Associate Editor for IEEE Transactions on Vehicular Technology; Computer Networks; and ACM/Wireless Networks, etc., and the Guest Editor for IEEE JSAC, IEEE Wireless Communications, and IEEE Communications Magazine. Dr. Shen received the Excellent Graduate Supervision Award in 2006, and the Outstanding Performance Award in 2004, 2007, and 2010 from the University of Waterloo, the Premier's Research Excellence Award (PREA) in 2003 from the Province of Ontario, Canada. Dr. Shen is a registered Professional Engineer of Ontario, Canada, an IEEE Fellow, an Engineering Institute of Canada Fellow, a Canadian Academy of Engineering Fellow, and a Distinguished Lecturer of IEEE Vehicular Technology Society and Communications Society.

To arrange a meeting with the speaker, please contact Liuqing Yang, [Liuqing.Yang@colostate.edu](mailto:Liuqing.Yang@colostate.edu).