

DLT Report by Prof. Tony Quek

Prof Tony Quek delivered a lecture series at the following locations:

- 1. Kunming, China – 28 June 2018**
Lecture Venue: Yunnan University
- 2. Xian, China – 2 July 2018**
Lecture Venue: Xidian University
- 3. Xian, China – 4 July 2018**
Lecture Venue: Xian Jiaotong University

Kunming, China

My first stop of this tour was Yunnan University. My hosts were Prof. Shaowen Yao and Dr. Mingxi Zhao of Yunnan University. The title of my lecture was “Fog Computing & Networking – A New Paradigm for Future IoT.” A recent trend during the past decade is to push various capabilities, such as computation, control, and storage, to the cloud. Such an over-dependence on the cloud, however, indicates that availability and fault tolerance issues in the cloud would directly impact millions of end-users. Such a cloud-centric architecture is not suitable for satisfying the demands of many delay-sensitive applications in future IoT. In viewing of these challenges, the cloud is now "descending" to the network edge and diffuses among the client devices in both mobile and wired networks. Such transition leads to the new paradigm of fog computing and networking. In this talk, I provided an overview of fog computing and networking and discussed some recent work related to this research area. Furthermore, I shared some interesting research problems related to fog computing and networking. There were about 100 people attending the talk, including postgraduate students and faculty members. Following my talk, we had an excellent Q&A session.



Xian, China

My second stop of this tour was Xidian University and my host were Prof. Jiandong Li and Prof. Min Sheng. The title of my lecture was “Augmented Intelligence for Future Networking”. Recent breakthroughs in artificial intelligence and machine learning, including deep neural networks, the availability of powerful computing platforms and big data are providing us with technologies to perform tasks that once seemed impossible. In the near future, autonomous vehicles and drones, intelligent mobile networks, and intelligent internet-of-things (IoT) will become a norm. At the heart of this technological revolution, it is clear that we will need to have augmented intelligence over a massively scalable, ultra-high capacity, ultra-low latency, and dynamic new network infrastructure. In this talk, I provided an overview of this vision and shared some of the technical challenges that our research community needs to tackle. In addition, I discussed some of my preliminary work in this direction. The number of audience was about 60 including postgraduate students and faculty members. Following my talk, there were many questions and discussions related to the topic of AI in communications and networks.



I gave my last DL talk at Xian Jiaotong University (XJTU). My host were Prof. Qinghe Du. The title of my lecture was “Augmented Intelligence for Future Networking”. There were about 30 people attending the talk, including postgraduate students and faculty members including Dr. Li Sun, Dr. Jing Xu, and Prof. Pingyi Ren. Following my talk, there was a fruitful discussion and a lab visit was conducted by Prof. Du.

