

IEEE ComSoc Distinguished Lecture Tour Experience in China

I have been serving IEEE, particularly ComSoc, for over 15 years in the forms of an author, a reviewer, an editor, a conference organizer and an administrative officer, but this is my first time to serve as a ComSoc Distinguished Lecturer. It is indeed fantastic experience. During the lecture tour, I have not only shared research findings with our members, but also learned local culture.

Before my trip, I created a list of lectures on various topics on wireless networking technologies and let the local chapters choose what they like. Three talks were chosen, which were focused on “cognitive radio networks”, “cross-layer design” and “social networks”. In search of new technologies to opportunistically utilize the harvested unoccupied spectrum resource, we demand novel network architectures to enable cognitive network entities to efficiently carry out spectrum harvesting and coordination. My talk on cognitive radio networks just serves this purpose. In my talk on cross-layer design, I discuss how cross-layer design has commonly been carried out and present our approach which uses the medium access control (MAC) layer as an anchor to extract cross-layer information and fast adapt to network dynamic changes and optimize the end-to-end network performance. In the talk on social networks, I discuss the analogy between social networks and wireless ad hoc networks and then present research findings on the small world phenomena in wireless networks. To help our student members, I was asked to give a special talk on how to do research.

My first stop was Shenzhen, Guangdong, China. Shenzhen is a special economic zone, which was selected as a trial site for new China economic development with more flexible policy and was largely responsible for the current economic boom in China. Many universities in China open their divisions there and many new companies were established there to incubate new technologies. My first talks were given at the Graduate School of Harbin Institute of Technology established in Shenzhen, with which my host, the local IEEE ComSoc chapter Chair Dr. Qinyu Zhang is also a Professor and a Dean. Local chapter really took advantage of this lecture tour and asked me to deliver two talks (“cognitive radio networks” and “social networks”). Although my tour was during summer vacation time, the talks were well attended and attracted more than 40 attendees. To help student members, I was asked to give an additional talk on how to do research, which was hosted by Professor Xiaoxia Huang at Shenzhen Institute of Advanced Technologies (SIAT), China Academy of Science, where I also had the opportunity to visit the Institute’s impressive R&D facilities and their products.



Fig. Talk at Shenzhen Institute of Advanced Technology

My second stop was in Chengdu, Sichuan, China, the home town of Panda. Although ComSoc does not have a local chapter there, the IEEE Chengdu Section coordinated this part of the lecture tour. My first talk was on cognitive radio networks hosted by Dr. Xumin Fang, Professor and Chair of the Department of Communications Engineering at Southwest Jiao Tong University (SWJTU). The talk was very well received with many lively questions. During this period, Dr. Fang and Dr. Pingzhi Fan, Vice President of SWJTU, also talked about their research effort on communications and networking over high-speed transportation systems, particularly their National 973 Project.



Fig. Professor Pan Li (Mississippi State Univ.), Yuguang Fang, and Professor Xumin Fang

My second talk in Chengdu was on cross-layer design and was hosted by the University of Electronic Science of Technology of China (UESTC), the new campus with very impressive modern architectural designed building and facilities, part of the university expansion movement in China. Many intriguing questions were raised, which had also benefited my research greatly. To publicize the ComSoc, I was asked to deliver a talk on wireless security in the School of Mathematics and Computer Science at Xihua University, a newly renovated program with tremendous interest in nurturing young faculty in telecommunications. I was happy to share with them not only on technical research, but also on IEEE (ComSoc) issues.

I cannot finish this part of report without mentioning the local attractions, particularly, Panda. My hosts Dr. Xumin Fang kindly arranged a special tour for me to visit the Panda base. Pandas seem to live only in Chengdu region due to its bamboo forest and climate, and hence they have been used to establish friendships with many other countries. For many people, Pandas were perceived to be animals with black and white outlooks as shown in the photo. In fact, there are also some other kinds. For example, in Panda base, there are many red pandas, which are small arboreal mammal native to the eastern Himalayas and southwestern China (not necessarily in Chengdu region). They are much smaller but more agile than Pandas. In the base, visitors can enjoy closer look at the Pandas in natural habitat.



Fig. Pandas with black and white furs



Fig. Red Panda in Sichuan Panda Base

My final tour stop is in Beijing, the capital of China. Dr. Xiaofeng Tao, the newly elected Chair for IEEE ComSoc Beijing Chapter, hosted my talk on cross-layer design at Beijing University of Posts and Telecommunications (BUPT). Attendees came from various institutes and asked many interesting questions. I was also offered tours to two National Key laboratories sited at BUPT and exchanged research ideas with many faculty and students during this visit.



Fig. Lecture at BUPT

In Beijing, I have also delivered multiple lectures not scheduled in my lecture tour but offered me the opportunity to publicize IEEE ComSoc. Thanks to Dr. Song Ci, Associate Professor of Computer Engineering from University of Nebraska at Lincoln, I had the opportunity to visit Institute of Acoustical Science at Chinese Academy of Science where impressive research on Internet of Things has been conducted. I gave three talks on social networks, cross-layer optimization and how to do research to disseminate my research, share my research experience and spread the words of IEEE ComSoc. I was particularly impressed by the research environment and the interest of over 40 attendees in my talks, which compelled me to make a few more trips to this institute for research exchange during my short stay in Beijing.



This was indeed a fruitful lecture tour for me. It would not be possible without the help from a few volunteers. Ms. Ewell Tan, executive of IEEE Asian Pacific Region, had done a fantastic job in shepherding and coordinating this lecture tour. My appreciation is also extended to those from local chapters for their arrangements and hospitality and they are: Drs. Pingyi Fan, Xiaoxia Huang and Qinyu Zhang from Shenzhen chapter; Drs. Pingzhi Fan, Xuming Fang, Gang Feng, Rong He, Li Hao, Zhen Ma, Houjun Wang, and Mr. Yue Zhao from Chengdu Section; and Drs. Chenyang Yang, Xiaofeng Tao, Song Ci and Ms. Ying Qi from Beijing Chapter.