

GLOBAL Communications NEWSLETTER

July 2014

Activities in 2014 of the ComSoc Harbin Chapter, China

By Weixiao Meng, Chair of IEEE ComSoc Harbin Chapter

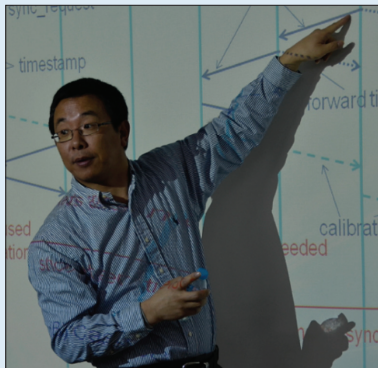
The IEEE Communications Society Harbin Chapter, PRC, was founded on 24 February, 2012. It has already been two years since approval. In the past year we have held many activities to make our community life much more colorful and acquire something that cannot be learned outside the activities at the same time. The activities are presented as follows.

We hold seminars to promote academic exchanges among scholars, both domestic and from overseas, as well as provide an interactive platform of academic exchanges to boost new ideas. Our teachers and students participate in these activities actively, and many of them are inspired by the scholars we invited.

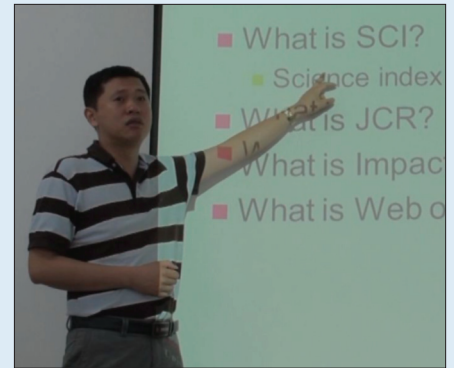
The first lecture was by Dr. Wei Xiang from the University of Southern Queensland, Australia from January 2 to 12, 2014, concerning his studies in wireless communication. Dr. Xiang currently serves as Associate Professor in the Electrical and Computer Engineering Department, and is also a Doctoral tutor, postdoctoral advisor, and IEEE senior member. He has made great contributions in the area of wireless communication theory, wireless broadband multimedia communications, Shannon information theory, and information source channel coding in more than 10 years of research. He has also presided over a number of Australian projects and international cooperation projects. The topic concerned "Rate-Distortion Optimization Theory and Practical Applications for 3D Video Communications" (Part 1: Rate-Distortion Optimization, and Part 2: Practical Applications). In order to make the minimum distortion of the transmission of time-frequency signals under the condition of the target data rate, we must choose a good compromise between image distortion and the coding bit rate. Then Dr. Xiang introduced the practical applications of this method in 3D Video Communications.



Cheng Li exchanging ideas with students.



Dr. Cheng Li presenting his lecture.



Dr. Wei Xiang presenting his lecture.

Dr. Xiang also talked about research activities on wireless networks in Tohoku University, providing valuable information for our teachers and students.

The second lecture was given by Prof. Cheng Li from Memorial University of Canada from February 16 to 19, 2014. Professor Li is a senior member of IEEE, a registered engineer of Canada, a member of the IEEE Communication Society, and a member of the IEEE Computer Society. He has made outstanding contributions in the field of broadband communications, wireless networks, and intelligent communication system. He has a high academic status and international influence on the research and application of wireless sensor networks. During the visit he gave three academic lectures: "Opportunistic and Cooperative Forwarding in Mobile Ad-hoc Networks with Light-Weight Proactive Source Routing"; "Routing Based Time Synchronization Protocol for Multi-hop Wireless Networks"; and "An Improved Localization Method Using Error Probability Distribution for Underwater Sensor Networks." At the beginning of the lecture Professor Li introduced the local conditions and customs of Canada, and the general situations of Canada Memorial University. In the following three days Professor Li gave wireless communication network related academic lectures. First he introduced an opportunistic and cooperative routing forwarding method which uses relay nodes to choose the next-hop node autonomously according to the routing protocols rather than the fixed routing. He introduced the importance of time synchronization, the commonly used method, and the time synchronization protocol. Professor Cheng Li further introduced the positioning method based on underwater sensor networks. This method adopted the error probability distribution method. In addition, at the end of the lecture Professor Li also shared his experience and methods to write a good article with classmates. Dr. Li gave directions to students in their

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Seventh IEEE International Conference on Advanced Networks and Telecommunication Systems (IEEE ANTS 2013), Chennai, India

*By Krishna Sivalingam, IIT Madras, India; T. Rama Rao, SRM University, Chennai, India;
Byrav Ramamurthy, University of Nebraska-Lincoln, USA; Deepak Kataria, IPJunction, USA;
Sudhir Dixit, HP, USA; Biswanath Mukherjee, University of California Davis, USA*

The Seventh IEEE International Conference on Advanced Networks and Telecommunication Systems (ANTS 2013) was held in Chennai, India, December 15-18, 2013, at SRM University, Kattankulathur, Chennai campus. IEEE ANTS (<http://ieee-comsoc-ants.org>) is the premier IEEE forum on Networking and Telecommunications topics in India, and the only conference in India that is financially sponsored by the IEEE Communications Society. The distinguishing characteristic of IEEE ANTS 2013 was the promotion of an intense dialogue between academia and industry to bridge the gap between academic research, industry initiatives, and governmental policies. This was fostered through tutorials, panel discussions, keynotes, invited talks, Ph.D. student forum, and industry exhibits. Attendees from academia were exposed to the state-of-the-practice and results from trials and interoperability experiments. Similarly, industry attendees benefited by exposure to leading-edge research while communicating to academic researchers the practical problems requiring further research. Further, an opportunity was provided to discuss governmental policies and make recommendations as appropriate to promote an innovation economy in India. IEEE ANTS 2013 drew more than 175 Indian and overseas attendees from academia, industry, and government.

IEEE ANTS 2013 received a record 165 long-paper submissions and 17 short-paper submissions from over 24 countries in response to the open call for papers. The Technical Program Committee (TPC), consisting of 48 members from 17 countries, selected 59 long papers (six pages) and eight short papers (three pages) for oral presentation. For the first time in ANTS history, a Ph.D. Student Forum was held exclusively for Ph.D. students to present their ongoing work and receive feedback; a total of seven papers were presented in the Ph.D. Student Forum. In addition, several invited papers were presented by leading researchers in the field. There were also a number of keynotes and invited talks from industry and government leaders on the latest developments in the telecommunications industry.

Dr. M. Ponnaivaikko, Vice-Chancellor of SRM University, began ANTS 2013 with his Inaugural Keynote; other keynote talks that stimulated technical debates were presented by Professor Vijay Bhargava, University of British Columbia and IEEE Communications Society Past-President; Dr. Vikram Srinivasan, Zettata Inc.; Shri B. M. Baveja, Department of Electronics and Information Technology, Government of India; Mr. Chandrasekaran Vasudevan, Ericsson; Mr. Narayan Menon, InterDigital Communications, Inc; and Mr. S. Prabhuraman, HCL Technologies.

The distinguished invited speakers from industry included Dr. Derek Long from Ericsson; Dr. R. M. Karthik from Samsung R&D, Bangalore; and Dr. Ramachandran Ramjee from Microsoft Research India.

In addition to talks by industry experts, IEEE ANTS 2013 also featured invited speakers from academia including Professor Abhay Karandikar, IIT Bombay; Professor Malathi Veeraraghavan, University of Virginia; Professor R. Venkatesh, IIT Madras; and Professor Krishna Jagannathan, IIT Madras.

Continuing its tradition, IEEE ANTS 2013 included three exciting panels on current hot topics: The Role of Wireless Networks and Telecom in Rural Development/Healthcare/Elderly Care: Global Scenario and Indian Perspective; Software-Defined Networks and Network Function Virtualization; and A Roadmap for Cloud Computing Adoption,



Group photo of some IEEE ANTS 2013 attendees.

Penetration and Innovation in India. The panel topics were carefully chosen to be reflective of themes of contemporary relevance and the distinguished panelists were drawn from subject-matter experts in academia, industry, and government to bring in a variety of perspectives.

The first panel on “The Role of Wireless Networks and Telecom in Rural Development, Healthcare, Elderly Care: Global Scenario and Indian Perspective” was moderated by Professor D. Narayana Rao (Director (Research) of SRM University). The panelists were: Professor Raja Datta, IIT Kharagpur; Mr. Chandrasekaran Vasudevan, Ericsson; Mr. V. P. Sanjay, CEO, Inknowtek; and Professor Prithiviraj Venkatapathy, Principal, RIT, Chennai. The panel covered typical use cases, required products, and solutions leveraging Machine-to-Machine (M2M) and Internet-of-Things (IoT) technologies and platforms, deployment challenges, regulatory issues, and challenges for integrating vertical applications.

The second panel on “Software-Defined Networks and Network Function Virtualization” was moderated by Ms. Sonali Sambhus, Senior Director, Sagegezza. The panelists were: Mr. Rajesh Kumar, CTO, Kloudspun; Professor Rudra Dutta, North Carolina State University; Dr. Satya Sai Prakash, Senior Solutions Architect, HCL Technologies; Professor Ram Rustagi, Professor at PESIT; and Mr. Narayan Menon, Vice President, Innovation Labs, InterDigital Communications, Inc. The panel covered questions such as: How is SDN/NFV enabling network transformation? What are the technical and business challenges for their adoption? What are the differences and intersections of SDN and NFV and what are the opportunities for students and innovators in this field?

The third panel on “A Roadmap for Cloud Computing Adoption, Penetration and Innovation in India” was moderated by Mrs. Pamela Kumar, Cloud Computing Innovation Initiative. The panelists were: Mr. Rajdeep Dua, Director R&D, VMware; Mr. M. R. Rajagopalan, Director CDAC; Professor D. Janakiram, IIT Madras; Mr. Sreenivasa Vithal, CMO of K7 Computing; Mr. N. Krishnan, CIO of Muthoot Fincorp Ltd. and CEO of Muthoot Pappachan Technologies; and Mr. Mahesh Menon, Tata Consulting Services (TCS). The panel covered issues and challenges around cloud computing adoption in India and the role of telecom operators to foster penetration. The need for close inter-working between cloud and telecom domains in emerging service delivery architectures was emphasized to enable the use of network technologies in innovative ways for different vertical industries.

The panel sessions were well attended and provided an excellent forum for interactive dialogue and information exchange that led to animated discussions with audience participation. Furthermore, IEEE ANTS 2013 featured five tutorials from expert academic and industry practitioners for the

benefit of students, faculty members, and delegates. The tutorials were:

1. Internet Architecture, Software-Defined Networking, and Network Virtualization, by Professor Rudra Dutta, North Carolina State University, Raleigh, USA.

2. Wi-Fi Technology Evolution and the use of campus Wi-Fi for teaching and research, by Dr. S. Srikanth, AU-KBC Research Centre, MIT, Chennai, India.

3. Next-Generation Optical Access PON Evolution, by Professor Anand Srivastava, IIT Mandi, India.

4. Software-Defined Networking (SDN) – Architecture for Programmable Networks, by Mr. Prasad Gorja, Architect/Principal Engineer, Freescale, India.

5. Introduction to LTE Networks, by Dr. Nadeem Akhtar, CEWiT, Chennai, and Professor T. Rama Rao, SRM University, Chennai, India.

In addition, several research demonstrations/exhibits were presented for showcasing new technologies and new products.

IEEE ANTS 2013 was sponsored by the IEEE Communications Society. The Organizing Committee is very grateful to have Alcatel-Lucent, HCL, Ericsson and InterDigital as Gold Patrons; and NMS Networks, Saggezza, Avaya, and L&T Infotech as Bronze Patrons. SRM University and IIT Madras also provided valuable support as University Patrons. The Committee is also thankful to Professor Vijay Bhargava for

his keynote and for presenting conference mementos to the Organizing Committee members.

IEEE ANTS 2013 was a double-track event, whose technical sessions focused on networking technologies and telecommunication design principles. From the technical sessions, the TPC co-chairs selected the following papers for Best Paper Awards:

Best Paper Award Recipient in the Long-Paper Category: “Surpassing Flow Fairness in a Mesh Network: How to Ensure Equity among End Users?,” by Sandip Chakraborty, Sukumar Nandi, and Subhrendu Chattopadhyay (Indian Institute of Technology Guwahati, India).

Best Paper Award Recipient in the Short Paper Category: “On Downstream Coax Framing in EPON Protocol over Coax (EPoC),” by Partha Bhaumik, Saigopal Thota, Biswanath Mukherjee (University of California, Davis, USA), Kira Zhangli (Huawei Technologies, P.R. China), Jim Chen Hesham ElBakoury, and Liming Fang (Huawei Technologies, USA).

Honorable Mention Recipient in the Long-Paper Category: “On Fault Tolerance in Data Center Network Virtualization Architectures,” by Sagar Joshi and Krishna M. Sivalingam (Indian Institute of Technology Madras, India).

IEEE ANTS 2014 will be held in New Delhi in December 2014. While continuing to focus on core foundational research on wired and wireless networking and contemporary hot topics, the conference plans to expand into new vistas where networking and communication technologies are intersecting with

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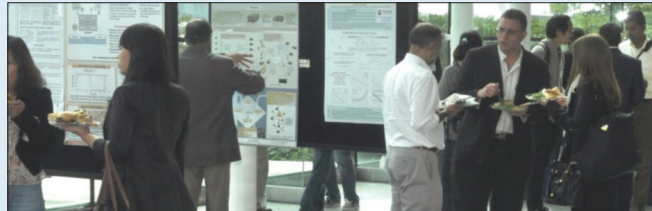
First Annual IEEE North Jersey Advanced Communications Symposium is a Great Success!

*Amit Patel, Adriaan van Wijngaarden, IEEE North Jersey Section;
and Hannah Zhao, Fairleigh Dickinson University, NJ, USA*

The 2013 IEEE North Jersey Advanced Communications Symposium (NJACS) was held at the Babbio Center, Stevens Institute of Technology, in Hobokon, NJ, on Saturday September 21, 2013. The symposium consisted of eight invited presentations and a parallel poster session with 18 posters from students from ARDEC, CUNY, FDU, NJIT, NYU-Poly, Princeton, Rutgers-WINLAB, and Stevens Institute of Technology. The symposium was well attended, with 84 participants from New Jersey and New York.

The symposium program started at 8.45 am with opening remarks from the symposium chair, Amit Patel; the IEEE North Jersey Section Chair, Russell Pepe; and Stevens Institute of Technology Vice-Provost, Dr. Constantin Chassapis. Mani Iyer, Program Chair, introduced the invited speakers for the morning session: Sundeep Rangan (NYU Poly) on millimeter wave picocellular wireless networks; Predrag Spasojevic (WINLAB, Rutgers) on the localization of packet-based radio transmitters in space, time, and frequency; Silvija Kokalj-Filipovic (WINLAB, Rutgers) on an efficient scheme for multi-media broadcast multicast services and its analysis; and Howard Huang (Bell Laboratories, Alcatel-Lucent) on a throughput-optimal communication strategy for the wireless random access channel. During lunch there was ample time for discussions with the participants and the poster presenters. The afternoon program was chaired by Nagi Naganathan and consisted of presentations by Tao Zhang (Cisco) on securing large-scale consumer vehicle networks; Geoffrey Smith (Proxim Wireless) on WIFI security; Krishnamurthy Raghunandan (MTA/New York City Transit) on cellular security. There was also a presentation by Professional Development speaker Bala Prasanna, which was made possible by IEEE-USA funding from membership dues.

In the closing remarks following the technical program, symposium chair Amit Patel introduced Stevens Professor Yu-Dong Yao, who announced the winners of the poster competi-



The poster presenters explain their results during lunch.



Poster winners and symposium organizers, from left to right: Amit Patel, symposium chair, Yu-Dong Yao, local arrangements chair, Kuang Cai, Stevens Institute of Technology (poster award, first place), Jie Tian, NJIT (poster award, third place), Mustafa Riza Akdeniz, NYU-Poly (poster award, second place), and Mani Iyer, program chair.

tion. The poster committee, chaired by Prof. Hong Man and including Frank Laslo, Irfan Lateef, Pitipana Sakarindr, and Manu Malek, evaluated the 18 posters by students from ARDEC, CUNY, FDU, NJIT, NYU-Poly, Princeton, Rutgers-WINLAB, and Stevens Institute of Technology. Prof. Yu-Dong Yao, on behalf of Poster Chair Prof. Hong Man, announced the poster prize winners:

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NORTH JERSEY SYMPOSIUM/Continued from page 3

First place: Kuang Cai, Department of Electrical and Computer Engineering, Stevens Institute of Technology, for the presentation of the poster “Exploiting Outband Radiation for Channel Identification” (this was joint work with Hongbin Li and Joseph Mitola III).

Second place: Mustafa Riza Akdeniz, Electrical and Computer Engineering Department, NYU Poly, for the presentation of the poster “Millimeter Wave Picocellular System Evaluation for Urban Deployments” (this was joint work with Yuanpeng Liu, Sundeep Rangan, and Elza Erkip).

Third place: Jie Tian, Computer Science Department, New Jersey Institute of Technology, for the presentation of the poster “Scheduling Survivability-Heterogeneous Sensor Networks for Critical Location Surveillance” (this was joint work with Tan Yan and Guiling Wang).

All poster presenters received a certificate. The winners received a poster award certificate as well as a check for \$400, \$300, and \$200, respectively.

In his closing remarks, Amit Patel thanked Stevens Institute of Technology for hosting the symposium and for the use of the Babbio Center, which proved to be an excellent venue for this symposium. The auditorium had the right size and was well equipped, and the unobstructed view of the New York skyline across the Hudson River during the breaks was impressive. Amit Patel further thanked several IEEE organizations for financial and organizational support: the IEEE North Jersey Section and its Communications and Vehicular Technology Chapters, who had received additional financial support from the IEEE Communications Society and the Vehicular Technology Society; and the Computer Chapter, as well as the IEEE New Jersey Coast Section’s Computer, Communications, and AP/VT/EMC Chapters. The symposium further received IEEE USA PACE Technical Chapter support.

Amit Patel further thanked all co-organizers and volunteers for their hard work that made the symposium a success. He thanked Mani Iyer, Program Chair and IEEE North Jersey Vehicular Technology Chapter Chair; Hong Man, Poster Committee Chair, and the Poster Committee members Frank Laslo,



NJACS organizers and volunteers, from left to right: Yu-Dong Yao, Hannah Zhao, Amit Patel, Irfan Lateef, Frank Laslo, Nagi Naganathan, Adriaan van Wijngaarden, Michael Newell, and Mani Iyer.



NJACS speakers and organizers, from left to right: Mani Iyer, Tao Zhang, Sundeep Rangan, Predrag Spasojevic, Howard Huang, Silvija Kokalj-Filipovic, Krishna Raghunandan (Raghu), Amit Patel and Nagi Naganathan.

Irfan Lateef, Pitipana Sakarindr, and Manu Malek. He further thanked Yu-Dong Yao, Local Arrangements, and Jennifer Chen, for her help at the venue; Michael Newell, Registration Chair as well as Cheng Zheng, Yu Zhou, and Zhen Ni for all their help at the registration desk; the event coordinators Nagi Naganathan and Hannah Zhou, and Adriaan van Wijngaarden, Publicity, and volunteers from the IEEE New Jersey Coast Section: Krishna Raghunandan (Section Chair, Speaker), Newman Wilson (Communications Society Chair), Frank Laslo (Section Secretary, ComSoc Membership Development), Kit August (Women in Engineering), Filomena Citarella (Joint AP/VT/EMC Chapter Chair) and Irfan Lateef (ComSoc Chapter Vice-Chair).

Contact information, pictures, and slides of the presentations can be found at the symposium website: <http://sites.ieee.org/northjersey/events/2013-njacs>.

Please contact the organizing committee or volunteers for any additional follow up questions or feedback on the event.

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other vertical industries in unique ways for innovative service offerings. We look forward to welcoming participation from academia, industry, and government in this exciting journey and leveraging the IEEE ANTS platform for contributing and exchanging ideas with global peers in the spirit of fostering global innovation. For more information, please contact the IEEE ANTS 2014 General Co-Chair, Professor Byrav Ramamurthy (byrav@cse.unl.edu), and Steering Committee Chair, Dr. Sudhir Dixit (sudhir.dixit@ieee.org).

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research domain patiently, and spoke with students and other teachers, which brought us new ideas about our research.

In a summary, we have gained a lot from our activities during the last year and we appreciate the fulfilling life in IEEE Communications Society Harbin Chapter. At the same time we look to the future and are confident of having many other wonderful moments in our community! Both teachers and students benefit a lot from these lecturers and have a deep impression of their rigorous research style and nice personality.

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