

ICON 2004 Conference Report

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Conference Description

The 12th IEEE International Conference on Networks (ICON2004) was held in Singapore Hilton, from November 16 - 19, 2004. It was organized by IEEE Singapore Computer Chapter, School of EEE, Singapore Polytechnic and Institute for Infocomm Research in cooperation with National University of Singapore and Nanyang Technological University.

The conference consisted of two days of tutorials and two days of technical presentations. It also included invited speakers (Dr. Radia Perlman and Prof. Louis F. Pau), work-in-progress sessions, poster presentations and an exhibition.

This year's conference was divided into the following categories:

- Application-layer protocols
- Differentiated services and queuing
- Flow and congestion control
- Grid Computing
- Multicasting
- Network architectures
- Network fault-tolerance, reliability, debugging and troubleshooting
- Network issues for multimedia, web and gaming applications
- Optical and photonics networks
- Peer-to-peer and overlay networking
- Policy based networking
- Privacy, security, DOS and defences
- Protocol design and implementation
- Quality of service
- Routing, switching and addressing
- Scheduling & resource management
- Tools and techniques for network simulation and measurement
- Traffic engineering and network management
- Transport protocols
- Wireless, mobile, ad hoc and sensor networks

Submitted Paper

The paper submitted for this conference is titled as “*IEEE 802.11 Wireless LAN Security Performance Using Multiple Clients*”, and authored by Assoc. Prof. Ray Hunt and myself.

It was based on the work I had done for my honours project. The paper was accepted as one of 130 papers out of 370 papers submitted from 41 countries. We also submitted the long version of the paper to Computer Communication journal.¹

Presentation in ICON2004

The presentations were held in four parallel sessions. Since my paper was more focused on the security side of wireless networks, it was presented in Session 4A (Privacy, security, DOS and defences), on the second day of the conference (November 17th, 2004).

The presentation went down well. I was given 20 minutes to present the paper including question and answer session. I had included a few slides on the basic concepts of security, in case some audience did not have enough background to be able to follow my talk. I managed to finish on time and received some good feedback at the end. It was interesting for the audience to know that we had set up a real test-bed to get the result, as opposed to most of the other papers, which had simulated their results.

Tutorials and Other presentations

On November 16, I attended a Tutorial on *Broadband Metro and Access Networks*, presented by Dr Raj Jain (Co-founder and CTO of Nayna Networks, San Jose, CA, USA). The tutorial covered the key technological developments in broadband networking in metro and access carrier networks and the role of 10 Gigabit Ethernet standard in unifying the local and wide area networks was presented. The features that make Next Generation SONET a tough competitor for Ethernet in the carrier metro networks were explained and the efforts underway to make Ethernet suitable for carrier network deployment were described. He also covered the basics of DSL operation and cable modems and explained the upcoming standards on Broadband wireless access and mobile broadband wireless access. I found Dr. Jain to be a very knowledgeable researcher in networking area and think that it will be good to keep in contact with him.

Ray also presented a tutorial on *Security of Wireless and Mobile Networks* on the same day. Unfortunately, I could not attend his one, as both tutorials were held at the same time (9am to 5pm).

¹ Baghaei, N., and Hunt, R., *Security Performance of Loaded IEEE 802.11b Wireless Networks*, Computer Communications, Elsevier, U.K., Vol 27, No 17, November 2004, pp 1746-1756

The papers presented in ICON2004 covered very wide topics with more emphasis on traffic engineering, privacy and security of the network, routing and switching, quality of service, ad hoc and sensor networks, and wireless and mobile networks. I attended several presentations under these categories, and found some of the research topics very interesting. It was a great opportunity to look at how other researchers conduct the experiments and present their result. I was mostly fascinated by few papers presented in session 1D and 2D (wireless and mobile networks), and 4A and 5A (privacy, security and defences).

The reception people were friendly and helpful, and had provided an excellent atmosphere for students with little experience at an international conference. There were five laptops provided with free access to internet and delicious desert was being served between the sessions.

Accommodation and Banquet

The conference this year was held in Hilton Hotel. It had a discounted rate of about \$200 a night for ICON members, so I stayed at another hotel around the corner for quarter of the price.

The banquet was in the evening of the second day at a luxurious restaurant in Sentosa Island (a very beautiful island, located in the south of the Singapore city). Before dinner, I managed to meet with Dr. Radia Perlman, (from Sun Microsystems Laboratories). She is the author of *"Interconnections"* and co-author of *"Network Security"* and mainly works on routing and security. Radia was one of the keynote speakers, giving a talk on *Myths, Missteps and Folklore in Network Protocols*. She was very interested in some of our research projects in Canterbury and asked me to send her a copy of the paper Allister Cournane and Ray wrote on tools used for the generation and prevention of spam².

Acknowledgement

This conference not only provided me with a chance to publish and present my paper, but also gave me the opportunity to interact with other participants and find out about the innovations and recent advances in computer networks and communications. I was able to gain valuable experience and confidence and for that, I am grateful to Assoc. Prof. Ray Hunt for providing financial assistance and for his constant support and inspiration. I would also like to thank Dr. Tim Bell and Computer Science and Software Engineering department for making my participation in this conference possible.

² Cournane, A. and Hunt, R., *An Analysis of the Tools used for the Generation and Prevention of Spam*, Computers and Security, Elsevier, UK, Vol 23 No 2, March 2004, pp154-166.