

**THE CHINESE UNIVERSITY OF HONG KONG**

Department of Information Engineering

*Seminar***Understanding Peer-to-Peer Resource Distribution
in the Internet**

by

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The Chinese University of Hong Kong

Abstract

The fast-growing traffic of peer-to-peer applications, most notably BitTorrent, is putting unprecedented pressure to Internet Service Providers (ISPs). Understanding the peer distribution over the global Internet thus becomes critical toward building new generation of ISP-friendly peer-to-peer systems.

There are unfortunately significant scalability and representability challenges in measuring and understanding realworld peer distribution. In this talk, I will demonstrate a novel hybrid measurement methodology that uses the PlanetLab as a distributed probing platform to interact with BitTorrent trackers and peers in the global Internet. Our design achieves fast realtime scanning of genuine online peers; yet we carefully avoid the potential copyright-infringement and traffic overhead to the PlanetLab. From a 3-month data of over 9 million peers, we identify issues in conventional traffic locality designs, and also shed new lights on re-engineering BitTorrent trackers.

I will also overview other related research projects in our group, including the measurement and enhancement of peer-to-peer video sharing, online map sharing, and software package distribution.

Biography

Jiangchuan Liu received the BEng degree (cum laude) from Tsinghua University, Beijing, China, in 1999, and the PhD degree from The Hong Kong University of Science and Technology in 2003, both in computer science. He is a recipient of Microsoft Research Fellowship (2000), Hong Kong Young Scientist Award (2003), and Canada NSERC DAS Award (2009). He is a co-recipient of the Best Student Paper Award of IWQoS (2008), Best Paper Award of IEEE ComSoc Multimedia Communications Technical Committee (2009), and Winner Award of Canada BCNet Broadband Innovation Challenge (2009).

He is currently an Associate Professor in the School of Computing Science, Simon Fraser University, British Columbia, Canada, and was an Assistant Professor in the Department of Computer Science and Engineering at The Chinese University of Hong Kong from 2003 to 2004.

His research interests include multimedia systems and networks, wireless sensor and mesh networks, and peer-to-peer and overlay networks. He is an Associate Editor of IEEE Transactions on Multimedia, and an Editor of IEEE Communications Surveys and Tutorials. He is TPC Vice Chair for Information Systems of IEEE INFOCOM'2011.

**** ALL ARE WELCOME ****

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