

UNIVERSITY OF CENTRAL FLORIDA & THE SCHOOL OF EECS

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EECS Seminar Series



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“Two Open Problems in Networking: Random Access Performance and P2P Streaming Capacity”

Thursday, March 19, 2009 • 1:00 p.m. • Harris Center (HEC) 101

We answer variants of the following two problems in networking, one on distributed scheduling in wireless networks and the other on content distribution in wireline networks. First, how good can random access protocols be without any message passing? We prove its optimality in long-term utility and trade off with short-term fairness. Second, what is the capacity of P2P streaming? We develop polynomial-time algorithms to compute the capacity region under various practical constraints. Interactions between distributed optimization, probability theory, and combinatorics are highlighted. The results were obtained in collaboration with Microsoft Research.

MUNG CHIANG

Mung Chiang is an Associate Professor of Electrical Engineering, and an Affiliated Faculty of Applied and Computational Mathematics and of Computer Science, at Princeton University. He received the B.S. (Honors) in Electrical Engineering and Mathematics, M.S. and Ph.D. degrees in Electrical Engineering from Stanford University in 1999, 2000, and 2003, respectively, and was an Assistant Professor at Princeton University 2003-2008. His research areas include optimization, distributed control, and stochastic analysis of communication networks, with applications to the Internet, wireless networks, broadband access networks, and content distribution.

His awards include Presidential Early Career Award for Scientists and Engineers 2008 from the White House, Young Investigator Award 2007 from ONR, TR35 Young Innovator Award 2007 from Technology Review, Young Researcher Award Runner-up 2004-2007 from Mathematical Programming Society, CAREER Award 2005 from NSF, as well as Frontiers of Engineering Symposium participant 2008 from NAE and SEAS Teaching Commendation 2007 from Princeton University. He was a Princeton University Howard B. Wentz Junior Faculty and a Hertz Foundation Fellow. His paper awards include ISI citation Fast Breaking Paper in Computer Science, IEEE INFOCOM Best Paper Finalist, and IEEE GLOBECOM Best Student Paper. His guest and associate editorial services include IEEE/ACM Trans. Netw., IEEE Trans. Inform. Theory, IEEE J. Sel. Area Comm., IEEE Trans. Comm., IEEE Trans. Wireless Comm., and J. Optimization and Engineering. He also has filed 16 patents and co-chaired 38th Conference on Information Sciences and Systems.