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IEEE North Jersey Communications Chapter

Network Utility Maximization: General Frameworks and Recent Advances

by **Mung Chiang**, Electrical Engineering Department, Princeton University

Date: October 7, 2004 (Thursday)
Time: 6:15 pm (refreshment starts at 6:00 pm)
Place: 202 ECEC, NJIT

About the Speaker

Mung Chiang is an Assistant Professor of Electrical Engineering 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, and has worked as a consulting systems engineer at three telecom startup companies and as a Principal Member of Technical Staff in Network Systems Engineering at SBC Communications.

Professor Chiang conducts research in the areas of nonlinear optimization of communication systems, architectures and algorithms for broadband access networks, and information theoretic limits of data transmission and compression. He has been awarded as a Hertz Foundation Fellow, Stanford Graduate Fellow, NSF Graduate Fellow, and received Stanford University School of Engineering Terman Award and SBC Communications New Technology Introduction Contribution Award. Professor Chiang is the Lead Guest Editor of the IEEE Journal of Selected Area in Communications Special Issue on 'Nonlinear Optimization of Communication Systems' in 2006, a Guest Editor of the IEEE Transactions on Information Theory Special Issue on 'Information Theory and Networking' in 2006, and the Program Co-Chair of the 38th Conference on Information Sciences and Systems in 2004.

About the Talk

Network utility maximization has provided an increasingly powerful framework for resource allocation in the Internet TCP/IP suite and various layers in wireless networks over the last few years. Compared to the traditional network linear flow problems, this framework utilizes many of the advances in nonlinear optimization theory and distributed algorithms. This talk presents a brief overview of the key applications of network utility maximization, a summary of some of the very recent results in this area, and an approach of 'layering as optimization decomposition'.

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