

Workshop on Flexible Network Design



November 4-5, 2005

**Princeton University
Computer Science Department
Small Auditorium (Room 105)**

Organizers

Matthew Andrews, *Bell Labs*
Moses Charikar, *Princeton University*
Anupam Gupta, *Carnegie Mellon University*
Stefano Leonardi, *Università di Roma*
"La Sapienza"
R. Ravi, *Carnegie Mellon University*

Network Design with its many variants is one of the most active mathematical research areas involving researchers from Theoretical Science, Graph Theory, Operations Research, Discrete Optimization, Game Theory and Information Theory. The goal of this workshop is to focus on this active area of applications of algorithms to understand current trends, identify understudied areas, and formulate new directions for further investigation. To this end, the workshop includes an eclectic mix of experts from real-world network design and deployment, graph algorithms, network coding, algorithmic mechanism design applied to pricing problems in networks, and configuration and routing of networks. For more information, please visit www.aladdin.cs.cmu.edu/workshops/netdes

Friday, November 4, 2005

- 8:30 am Continental Breakfast
- 9:15 am **Jennifer Rexford**, *Princeton University*
A Routing Control Platform for IP Networks
- 9:45 am **Harald Räcke**, *Toyota Tech. Institute at Chicago*
Oblivious Network Design
- 10:15 am Break
- 10:40 am **Anant Balakrishnan**, *University of Texas at Austin*
Cutting Plane Approach for Service Network Design
- 11:10 am **Dan Bienstock**, *Columbia University*
Title TBD
- 11:40 am **Lisa Fleischer**, *IBM T J Watson Research Center*
Title TBD
- 12:10 pm Lunch
- 1:00 pm Open Problems
- 1:30 pm **Adrian Vetta**, *McGill University*
Metric Design with Network Costs
- 2:00 pm **Lisa Zhang**, *Lucent Technologies Bell Labs*
Design for Optical Transparency
- 2:30 pm **Nick Harvey**, *MIT*
Title TBD
- 3:00 pm Break
- 3:30 pm **Iraj Saniee**, *Bell Labs Research*
Load Balancing in CDMA Networks: A Distributed Dual Optimization Approach
- 4:00 pm **Guido Schäfer**, *Technische Universität Berlin*
A Tight 4.66-Approximation for Multicommodity Rent-or-Buy
- 4:30 pm **Chaitanya Swamy**, *Caltech*
- 5:00 pm Title TBD

Saturday, November 5, 2005

- 8:30 am Continental Breakfast
- 9:30 am **Mohammad Mahdian**, *Microsoft Research*
Title TBD
- 10:00 am **Joseph Cheriyan**, *University of Waterloo*
On packing Steiner trees and related problems
- 10:30 am Break
- 10:50 am **Thierry Klein**, *Lucent Technologies Bell Labs*
Dynamic optimizations for next-generation wireless networks
- 11:20 am **Sanjeev Khanna**, *University of Pennsylvania*
Edge Disjoint Paths: On the Integrality Gap of the Multicommodity Flow Relaxation
- 11:50 am **Christian Scheideler**, *Johns Hopkins University*
Towards a paradigm for robust distributed algorithms and data structures
- 12:20 pm Lunch
- 1:10 pm **Kamal Jain**, *Microsoft Research*
Title TBD
- 1:40 pm **Tim Roughgarden**, *Stanford University*
Title TBD
- 2:10 pm **MohammadTaghi Hajiaghayi**, *CSAIL - MIT*
- 2:40 pm Graph Algorithms for Wireless Networks