

Large-Scale Communication Networks: Topology, Routing, Traffic, and Control

Monday March 18, 2002

- 9:00 *Mini-Workshop on "Internet Congestion Control"*
- 9:00–9:30 **Frank Kelly** (Stanford University)
Introduction
- 9:30–10:00 **Glenn Vinnicombe** (Cambridge University)
Robust Congestion Control for the Internet
- 10:00–10:30 *Break*
- 10:30–11:30 **Fernando Paganini** (UCLA)
Scalable Laws for Stable Network Congestion Control
- 11:30–12:00 **Teun Ott** (New Jersey Institute of Technology)
Explicit Congestion Notification and the TCP Paradigm.
- 12:00–12:30 **François Baccelli** (Ecole Normale Supérieure, France)
Interaction of TCP flows as Billiards (joint work with D. Hong)
- 12:30–2:00 *Lunch (on your own)*
- 2:00–3:00 **Steven Low** (California Institute of Technology)
Equilibrium and Dynamics of TCP/AQM
- 3:00–3:30 **Priya Ranjan** (University of Maryland, ISR)
Nonlinear Dynamics of TCP with Red Control
- 3:30–4:00 *Break*
- 4:00–5:00 **Srisankar Kunniyur** (University of Pennsylvania)
An exact penalty function view of resource allocation and congestion control in the Internet
- 5:00–5:30 **Sanjay Shakkottai** (University of Illinois at Urbana-Champaign)
Functional Differential Equation Models for Proportionally-Fair Congestion Controllers
- 5:30–6:00 **Hari Balakrishnan** (Massachusetts Institute of Technology)
OverQoS: End-to-end QoS without End-to-end Machinery



Tuesday March 19, 2002

- 9:00–9:30 **Vishal Misra** (Columbia University)
Active queue management: theory, experiment and implementation
- 9:30–10:00 **Milan Vojnovic** (Swiss Federal Institute of Technology (EPFL))
Observations on Equation-Based Rate Control
- 10:00–10:30 *Break*
- 10:30–11:30 **Peter Key** (Microsoft Research)
Congestion control for heterogeneous sources: strategies and cooperation.
- 11:30–12:00 **Jim Roberts** (France Telecom)
Insensitivity in IP network performance
- 12:00–12:30 **Laurent Massoulié** (Microsoft Research)
Flow level dynamics of congestion control for file transfers
- 12:30–2:00 *Lunch (on your own)*
- 2:00 *Mini-Workshop on "Internet-wide Measurements"*
- 2:00–3:00 **Paul Barford** (University of Wisconsin)
Introduction
- 3:00–3:30 **David Moore** (Caida)
Pitfalls and Problems with Internet Data
- 3:30–4:00 *Break*
- 4:00–5:00 **Les Cottrell** (Stanford University)
A new infrastructure for high throughput network and application performance measurement
- 5:00–5:30 **Harry Delano** (Matrix)
- 5:30–12:00 *Wine/Cheese Reception (Hosted by IPAM)*

Wednesday March 20, 2002

- 9:00–9:30 **Gomathi Ramachandran** (AT&T)
Active Performance Measurements on the AT&T IP Backbone
- 9:30–10:00 **Christophe Diot** (Sprint)
Over-provisioning, the only solution to QoS and Traffic Engineering
- 10:00–10:30 *Break*

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- 10:30–11:30 **Constantinos Dovrolis** (University of Delaware)
End-to-end available bandwidth estimation
- 11:30–12:30 **Venkat Padmanabhan** (Microsoft Research)
Server-based Characterization and Inference of Internet Performance
- 12:30–2:00 *Lunch (on your own)*
- 2:00–3:00 **Kihong Park** (Purdue University)
Performance implications of power-law topology for network control
- 3:00–3:30 **Ratul Mahajan** (University of Washington)
Measuring ISP topologies with Rocketfuel
- 3:30–4:00 *Break*
- 4:00–4:30 **Martin Arlitt** (University of Calgary)
Large Scale WAN Emulation
- 4:30–5:00 **Matthias Grossglauser** (AT&T)
Trajectory Engine: A Backend for Trajectory Sampling
- 5:00–5:30 **Anja Feldmann** (Saarland University)
Generating Realistic BGP Traffic

Thursday March 21, 2002

- 9:00–10:00 **George Varghese** (University of California at San Diego)
Detecting Traffic Patterns at High Speeds in Routers
- 10:00–10:30 *Break*

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- 10:30–11:30 **David Plonka** (University of Wisconsin)
IP Flow-based Measurement and Analysis with FlowScan
- 11:30–12:00 **Matthew Roughan** (AT&T)
SNMP: Simple Network Measurements Please
- 12:00–1:00 *Lunch (on your own)*
- 1:00 *Mini-Workshop on "Internet Routing and Topology"*
- 1:00 *Structure and Modeling*
- 1:00–1:30 **Chen-Nee Chuah** (Sprint ATL)
Design principles of a 1-tier IP backbone
- 1:30–2:00 **Mark Crovella** (Boston University)
On the Geographic Location of Internet Resources
- 2:00–2:30 **Don Towsley** (University of Massachusetts)
Power Laws and the Internet Topology
- 2:30–3:00 **Fan Chung Graham** (University of California at San Diego)
Random graphs and Internet graphs
- 3:00–3:30 *Break*
- 3:30 *BGP Monitoring, Hierarchy, Impact*
- 3:30–4:00 **Tim Griffin** (AT&T)
What is the Sound of One Route Flapping?
- 4:00–4:30 **Andy Ogielski** (Renesys Corporation)
Global Routing Instabilities
- 4:30–5:00 **Jennifer Rexford** (AT&T)
Controlling the Impact of BGP Policy Changes on IP Traffic
- 5:00–5:30 **Ramesh Johari** (Massachusetts Institute of Technology)
Routing and Peering in a Competitive Internet
- 5:30–12:00 *Dinner (Hosted by IPAM)*

Friday March 22, 2002

- 9:00 *Modeling and Optimization*
- 9:00–9:30 **Milena Mihail** (Georgia Institute of Technology)
Explaining Power Laws by Trade-Offs
- 9:30–10:00 **John Doyle** (California Institute of Technology)
Self-Similarity, Power Laws and Internet Topology
- 10:00–10:30 *Break*
- 10:30–11:30 **Ramesh Govindan** (ICSI)
Network Topologies: Large-Scale Structure and Hierarchy
- 11:30–1:00 *Lunch (on your own)*
- 1:00 *Stability, Convergence, QOS*
- 1:00–1:30 **Lixia Zhang** (UCLA)
Simple Protocols, Complex Behavior
- 1:30–2:30 **Cengiz Alaettinoglu** (Packet Design)
Detailed Analysis of ISIS Routing on the Qwest Backbone: A Recipe for Subsecond ISIS Convergence
- 2:30–3:00 **Ion Stoica** (University of California at Berkeley)
Internet Indirection Infrastructure
- 3:00–12:00 *Conclusion*

