Call for Papers

Joint special issue of the IEEE TRANSACTIONS ON INFORMATION THEORY and the IEEE/ACM TRANSACTIONS ON NETWORKING

Networking and Information Theory

A joint issue of the IEEE TRANSACTIONS ON INFORMATION THEORY and the IEEE/ACM TRANSACTIONS ON NETWORKING will be devoted to the connections between networking and information theory. Original research papers that make major contributions to research on information theoretic aspects of networking, operations of networks and other related problems with an information theoretic components are sought.

While connections between networking and information theory have always been promising, recent developments point to especially fruitful common ground between these two areas. On the networking side, the complexity of physical layer issues, particularly in wireless networks, has prompted an inter-layer approach that fits well in the context of information theory. On the information-theoretic side, classical approaches to multiuser information theory have been enhanced by an active interest in casting practical networking problems in an information-theoretic setting. In particular, theoretical developments in information theory have drastically changed the angle of attack on information theoretic problems of networking.

Examples of such intersection areas are scaling laws in networks, network coding, implementation and theory of multiuser systems, wireless network design involving multi-input multi-output channels, and queueing and delay issues in information-theoretic capacity settings. A special issue that focuses on these activities and gives an overview of related efforts would serve both the networking and information theory communities and, we hope, deepen interest in interdisciplinary work.

Papers for this special issue should relate to the developments described above. Expository papers, survey papers, research papers and correspondence items are welcome. Topics include, but are not limited to, the following:

- Network coding
- Limit behavior of large networks
- Multi-terminal information theory for networks
- Information theory for queueing and network delay
- Coding for network robustness and reliability

Prospective authors should follow the regular guidelines of the IEEE TRANSACTIONS ON INFORMATION THEORY. Further information and submission details can be found at:

http://www.special-issue-it-ton.info

Guest Editors
N. Cai, University of Bielefeld
M. Chiang, Princeton University
M. Effros, Caltech
R. Koetter, University of Illinois Urbana-Champaign
M. Medard, Massachusetts Institute of Technology
B. Prabakhar, Stanford University
R. Srikant, University of Illinois Urbana-Champaign
D. Towsley, University of Massachusetts
R. W. Yeung, The Chinese University of Hong Kong

Schedule
Submission deadline: February 15, March 14, 2005
Selection of papers: Dec. 15, 2005
Publication: June, 2006