

Call For Papers

IEEE Transactions on Signal Processing Special Issue on Signal Processing in Networking

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The area of packet networking offers a wide range of problems for which signal processing can provide elegant and efficient solutions. Raising awareness and surveying the state of art of signal processing in networking is very timely.

This Call for Papers is directed to two research communities whose union is considerably larger than their intersection. On one hand, we solicit papers from researchers in signal processing, who apply their expertise to problems related to network traffic, performance, topology, and protocols. On the other hand, we also solicit papers from researchers in networking, who are working on topics with signal processing aspects such as novel types of data analysis, estimation, and prediction.

The scope of this Special Issue of the IEEE Transactions on Signal Processing covers signal processing research for networking where the basic signal entities are information packets. Papers

on networks that have limited signal processing focus are out of the scope of this call. Signals extracted from network traffic can be useful for determining persistent or intermittent causes of network degradation such as packet delays and losses. Such causes might include traffic bottlenecks or link failures. Packets can also be used for probing and estimating the state of the network and the quality of connection between two points. Internet tomography has emerged as one of the techniques of investigating Internet's complicated topology. Methods of multi-scale and other types of time series analysis are needed to study long-range dependence and other features of network traffic. Finally, the emergence of large scale mobile networks, both cellular and ad hoc, raises new signal processing challenges of low power signal processing, interference and fading mitigation, and data compression.

We call for high-quality innovative research papers and also for review papers in the broad signal processing areas described above. Examples of topic areas pertinent to this special issue are the following:

- new models for network traffic and related phenomena
- wavelet, multifractal and independent component analysis in networks
- estimation, prediction, inference and dynamical tracking of network parameters
- signal processing techniques for network topology analysis
- signal processing aspects of network protocols
- signal processing for content delivery techniques: compression servers, unicast, multicast, etc.
- distributed signal processing for ad hoc networks

Schedule:

Manuscript submission deadline:	September 15, 2002 (early submission is encouraged)
Notification of acceptance:	January 31, 2003
Final manuscript due:	April 30, 2003
Tentative publication date:	August 2003

Submission procedure:

Authors should prepare their manuscripts according to the guidelines provided through Manuscript Central on the web at <http://ieeemanuscriptcentral.com/tsp>. Authors MUST provide the title of the Special Issue in the key words field in order for their paper to be properly assigned to a Guest Editor. Please be sure to specify your paper type to reflect the Special Issue and its publishing month and year. Note that we require your signed copyright form be faxed (732-562-8905) to the IEEE office at the time of submission.