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IEEE Transactions on Information Forensics and Security: Special Issue on Statistical Methods for Network Security and Forensics

Recently, probabilistic methods have gained importance in various aspects of network security and forensics. Such methods are at the forefront of recent advances in intrusion detection, but also underlie distributed detection and estimation for sensor networks and information-theoretic approaches to network security. In the context of intrusion detection, statistical pattern recognition is a core problem which can be addressed using methods from Bayesian theory, learning theory, graphical models, and data mining. Data acquisition, processing, and inference in sensor networks also leverages a substantial body of literature on statistical estimation, detection, and classification theory. At the same time, new developments in network information theory have led to renewed interest in classical aspects of information-theoretic security, such as wiretapping, as well as new areas of work, such as network coding applications to security. Many advances in network information theory revolve around wireless networks and sensor networks, areas in which a shared medium and rich, variable topologies, create particularly challenging problems. Information theory has proven useful both for determining the fundamental performance limits of such systems, including jamming and novel countermeasures, e.g., coding techniques in networks.

The goals of the special issue are to provide the reader with an overview of the state of the art in this field, and to collect significant research results. Possible topics for papers submitted to the special issue include, but are not limited to:

- Intrusion, masquerade, and anomaly detection
- Network scaling issues
- Network surveillance
- Dynamic models for mobile ad-hoc networks
- Distributed sensing, estimation, detection, and classification
- Information theory for secrecy in wireless networks
- Advances in the wiretap channel
- Eavesdropping and jamming in wireless networks
- Network information theory for Byzantine attacks
- Security aspects of network coding

IMPORTANT DATES

Paper submission deadline	1 October 2007	extended to 15 October 2007
Completion of first round of reviews	2 January 2008	
Final review and selection of papers	1 May 2008	
Final manuscripts to IEEE	1 June 2008	
Publication of the Special Issue	1 September 2008	

INSTRUCTIONS FOR MANUSCRIPTS

Manuscripts should be submitted electronically by following the information for authors at:

<http://www.ieee.org/organizations/society/sp/tifs.html>

Both the manuscripts and cover letter should be clearly marked to indicate that they are being submitted for consideration for this Special Issue. They will be logged and sent to the Special Issue Editors for review. Both full-length regular papers and short papers will be considered, subject to the normal Transactions page limits. Papers must not have been published previously or submitted for publication elsewhere. All papers will be reviewed by following the guidelines of the transactions.

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