IEEE THEMES

IEEE Signal Processing Society ®

IEEE—Thematic Meetings on Signal Processing

Signal and Information Processing for Social Networks

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Important Dates

♦ **NOVEMBER 15, 2009** — Papers Due

♦ **January 15, 2010** — Accept/Reject Notifications Sent

♦ **March 1, 2010**—Final Camera-ready Papers Due

♦ **March 15, 2010**—THEMES

♦ **August 2010**—Articles Published in J-STSP

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The IEEE Signal Processing Society is initiating a new technical series called IEEE -Thematic Meetings in Signal Processing (THEMES). IEEE-THEMES is a one-day event and will be held for the first time in 2010 in conjunction with ICASSP in Dallas, Texas, USA. IEEE-THEMES is organized in a single track to cover intensively one focus area each meeting. THEMES 2010 will focus on Signal and Information Processing for Social Networks.

Accepted papers will be published in an issue of the IEEE Journal of Selected Topics in Signal Processing. Submission procedures of the IEEE Journal on Selected Topics in Signal Processing (J-STSP) should be followed by submitting authors for IEEE-THEMES. For more instructions please visit www.ieee-themes.org.

C A L L   F O R   P A P E R S

There are currently two major trends towards social networks where signal and information processing are playing an increasing role:

Mobile sensors: As pointed out in a recent Nature article , the single, most important source of data is the ubiquitous mobile phone. Every time a person uses a mobile phone, a few bits of information can be collected; including geographic information, physical activity; the phone's signal processing hardware can analyze the user's speaking patterns.

Internet-base social communities: We are witnessing the emergence of large-scale social network communities such as Napster©, Facebook©, Twitter©, and YouTube© where millions of users form a dynamically-changing infrastructure to share content. Such proliferation and introduction of the new concept of web-based social networking creates a technological revolution not only for the personal and entertainment purposes, but also for many new applications of government/ school/industry/research that bring new experiences to users.

In both cases, the massive content production poses new challenges to the scalable and reliable sharing of (multimedia) content over large and heterogeneous networks. While demanding effective management of enormous amounts of unstructured content that users create, share, link and reuse, this also raises critical issues of intellectual property protection and privacy. In large-scale social networks, millions of users actively interact with each other, and such user dynamics not only influence each individual user but also affect the system performance. To provide a predictable and satisfactory level of service, it is important to analyze the impact of human factors on multimedia social networks, and to provide important guidelines to better design of multimedia systems. Similarly, economists are making progress toward understanding social learning, asking how networked agents can form a consensus in their estimates or actions given state measurements.

The goal of THEMES is to encourage researchers from different areas (signal processing, information management, computer sciences, and psycho-sociology) to come together to explore and understand the impact of signal and information processing for the emerging research field of social networks, and ultimately to design systems with more efficient, secure, context-aware, and personalized services.

RELEVENT TOPICS INCLUDE BUT ARE NOT LIMITED TO:

Behavior modeling and analysis in social networks: to improve our understanding of (large-scale) human behavior in social networks and to model user dynamics to demonstrate how such understanding can help improve information and communication system performance.

Collective intelligence and consensus formation in large scale networks which consist of both humans and machines.

Cognitive modeling, machine learning/ understanding, and synthesizing social phenomenon and events, including, e.g., game theoretic and Bayesian social learning; analysis of social learning phenomenon such as rational herding.

Securing mechanism and privacy in social networks: to understand how interactions in social networks may post security/privacy issues and how to deal with them, and how to develop trust/belief model/evaluation/ framework.

Applications of social networks: to understand how the concepts of social networks can help improve our modeling and analysis of traditional problems where interactions of multiple users and systems can be considered as social networks. Examples include:

● Peer-to-peer streaming, signal processing, and communications
● Multi-user information theory
● Multi-user rate and resource allocation
● Mobile, sensor, or human networks
● Database and content retrieval