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Inside Signal Processing E-Newsletter

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Highlights of This Issue

- [Society](#) named Chellappa, De Mori, Djuric, Reibman, and Sidiropoulos 2008 Distinguished Lecturers
- [Conference News](#): Access the latest work and plenary talks given at MMSP'07
- [Journal News](#): Call for papers of new special issues from SPM and SPS journals
- [TC News](#): SPCOM TC officially extends its scope to Communications and Networking
- [Chapter News](#): Upcoming SPS Distinguished Lectures and local chapter activities
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Please bookmark <<http://enews.ieee-spm.org>> for current and archived issues of the Inside Signal Processing E-Newsletter. IEEE members may manage their subscription of the email notification of the E-Newsletter at this URL <<http://ewh.ieee.org/enotice/options.php?LN=SP001>>.

1. Society News

2008 Class of SPS Distinguished Lecturers Announced

The IEEE Signal Processing Society (SPS) announced the 2008 Class of Distinguished Lecturers. Five colleagues were honored and they are: **Rama Chellappa** (University of Maryland, College Park); **Renato De Mori** (University of Avignon, France); **Petar M. Djuric** (Stony Brook University); **Amy R. Reibman** (AT&T Labs-Research); and **Nikos Sidiropoulos** (Technical University of Crete, Greece).

The IEEE SPS Distinguished Lecturer Program provides the means for Chapters to have access to well-known educators and authors in the fields of signal processing to lecture at Chapter meetings. While many IEEE Societies have similar programs, the SPS provides a substantial amount of financial support for the Chapters to take advantage of this service. Chapters interested in arranging lectures by the Distinguished Lecturers can obtain information from the Society's [web page](#) or by sending an e-mail message to <sp.info AT ieee.org>.

Each year, candidates for the Distinguished Lecturer Program are solicited by the Awards Board from the Society Technical Committees, Editorial Boards, and Chapters. The Awards Board vets the nominations and the Board of Governors approves the final selection. Distinguished Lecturers are appointed for a term of two calendar years.

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2. Conference News

MMSP 2007 Held in Chania, Greece

The ninth IEEE International Workshop on Multimedia Signal Processing (MMSP) was held in Chania, Greece, on October 1-3, 2007 (<http://mmsp2007.org>). Following the examples of recent successful MMSP workshops, the organizing committee of MMSP 2007 has continued and enhanced the interdisciplinary nature of the event, trying to increase participation in multimedia areas that have been previously underrepresented. Learn more about MMSP 2007 and access the invited/plenary presentations from [this report](#).

SPS Conference Call-for-Paper & Deadlines	Location	Date	Tutorial/Special Session	Submission Deadline
Symposium in Signal and Multimedia Processing (SMP) at 21st IEEE Canadian Conference on Electrical and Computer Engineering (CCECE)	Niagara Falls, Canada	May 4-7, 2008		Dec. 7, 2007

IEEE International Symposium on Biomedical Imaging (ISBI'08)	Paris, France	May 14-17, 2008		Dec. 7, 2007
NEW 1st International Workshop on Cognitive Information Processing	Santorini, Greece	June 9-10, 2008		Jan. 5, 2008
IEEE International Conference on Multimedia & Expo (ICME'08)	Hanover, Germany	June 23-26, 2008	Nov. 26, 2007	Dec. 24, 2007
IEEE Workshop on Signal Processing Advances in Wireless Communications (SPAWC'08)	Receife, Brazil	July 6-9, 2008		Jan. 28, 2008
International Conference on Audio, Language and Image Processing (ICALIP'08)	Shanghai, China	July 7-9, 2008		Jan. 31, 2008
IEEE Workshop on Multimedia Signal Processing (MMSP'08)	Cairns, Queensland, Australia	Oct. 8-10, 2008	March 8, 2008	April 18, 2008
IEEE International Conference on Image Processing (ICIP'08)	San Diego, CA	Oct. 12-15, 2008	Dec. 7, 2007 (Nov. 7, 2007 for workshops)	Jan. 18, 2008

Upcoming Signal Processing Conferences	Location	Advanced Registration	Conference Dates
IEEE Conference on Signal Processing Systems (SIPS'07)	Shanghai, China		Oct. 17-19, 2007
IEEE Workshop on Applications of Signal Processing to Audio and Acoustics (WASPAA'07)	New Paltz, NY		Oct. 21-24, 2007
Asilomar Conference on Signals, Systems, and Computers (Asilomar'07)	Pacific Grove, CA		Nov. 4-7, 2007
Picture Coding Symposium (PCS'07)	Lisbon, Portugal		Nov. 7-9, 2007
International Packet Video Workshop (PV'07)	Lausanne, Switzerland		Nov. 12-13, 2007
IEEE Automatic Speech Recognition and Understanding Workshop (ASRU'07)	Kyoto, Japan		Dec. 9-13, 2007
IEEE International Workshop on Computational Advances in Multi-channel Sensor Array Processing (CAMSAP'07)	U.S. Virgin Islands	Nov. 11, 2007	Dec. 12-14, 2007
IEEE International Symposium on Signal Processing & Information Technology (ISSPIT'07)	Cairo, Egypt		Dec. 15-18, 2007
IEEE Speaker and Language Recognition Workshop (Odyssey'08)	Stellenbosch, South Africa	Dec. 3, 2007	Jan. 21-25, 2008
International Symposium on Communications, Control and Signal Processing (ISCCSP'08)	St. Julians, Malta	Jan. 12, 2007	March 12-14, 2008
IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP'08)	Las Vegas, NV	TBA	Mar. 31-April 4, 2008
IEEE/ACM Information Processing in Sensor Networks (IPSN'08)	St. Louis, MO	TBA	April 22-24, 2008

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3. Publication News

Upcoming Deadlines for **Signal Processing Magazine**: <http://www.ieee-spm.org/?i=cfp>

- [Waveform-Agile Sensing and Processing](#) – Whitepaper Deadline: **1 December 2007**
- [Columns/Forums](#) rolling submission deadlines

Special Issue Deadlines of SPS Journals

- [Signal Processing for Astronomical and Space Research Applications](#) - Deadline: 1 February 2008
(Journal of Selected Topics in Signal Processing)
- [fMRI Analysis for Human Brain Mapping](#) - Deadline: 15 March 2008
(Journal of Selected Topics in Signal Processing)

Recent Issues of SPS Sponsored and Co-sponsored Publications

Journal Title	Latest Issue	Contents (in PDF)	Xplore Link
IEEE Signal Processing Magazine <ul style="list-style-type: none"> • Special Section on Signal Processing for Multiterminal Communication Systems • Feature Articles on Wavelet Frames and MIMO Precoding & Radar • Columns on Concert Hall Acoustics, WiMAX Standard, and Quantum Dots in Imaging 	vol. 24, no. 5	PDF	Html
IEEE Transactions on Audio, Speech, and Language Processing	vol. 15, no. 8	PDF	Html
IEEE Transactions on Image Processing	vol. 16, no. 11	PDF	Html
IEEE Transactions on Information Forensics and Security	vol. 2, no. 3	Part 1 Part 2	Html
IEEE Transactions on Signal Processing	vol. 55, no. 11	PDF	Html
IEEE Signal Processing Letters	vol. 14, no. 11	PDF	Html
IEEE Journal of Selected Topics in Signal Processing <ul style="list-style-type: none"> • Adaptive Waveform Design for Agile Sensing and Communication • Network-Aware Multimedia Processing and Communications • Performance Limits of Ultra-Wideband Systems 	vol. 1, no. 1 vol. 1, no. 2 vol. 1, no. 3	PDF PDF PDF	Html
Journal Title	Latest Issue	Contents (in PDF)	Xplore Link
IEEE Transactions on Medical Imaging	vol. 26, no. 11	PDF	Html
IEEE Transactions on Mobile Computing	vol. 6, no. 12	PDF	Html
IEEE Transactions on Multimedia	vol. 9, no. 7	PDF	Html
IEEE Sensors Journal	vol. 7, no. 12		Html
IEEE Transactions on Wireless Communications	vol. 6, no. 10	PDF	Html
Computing in Science & Engineering Magazine	vol. 9, no. 6	PDF	Html
IEEE MultiMedia	vol. 14, no. 4	PDF	Html

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4. TC News

Signal Processing for Communications and Networking (SPCOM) Technical Committee

At its September 2007 meeting, the IEEE Signal Processing Society (SPS) Board of Governors approved a motion to add Networking to the scope and name of the Signal Processing for Communications Technical Committee (TC), which from now on is called the *Signal Processing for Communications and Networking Technical Committee* (but still abbreviated SPCOM TC for brevity). Learn more about the rationale for this change and many activities and responsibilities of the SPCOM TC through this [exclusive in-depth report](#).

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5. Chapter News and Distinguished Lectures

Do you know? IEEE SPS provides travel support for local chapters to invite **SPS Distinguished Lecturers**. See [a list of 2007 SPS DLs](#) and check each issue of the E-News for upcoming SPS Distinguished Lectures near you.

Chapter	Dates	SPS Distinguished Lectures
Santa Clara Valley, CA	10-Dec-2007	Prof. Tsuhan Chen (Carnegie Mellon University): "Re-Live the Movie 'The Matrix': From Harry Nyquist to Image-Based Rendering," 6:30pm at National Semiconductor (2900 Semiconductor Dr., Santa Clara, CA 95051). See chapter web site for more information.
Chapter	Dates	Other Upcoming Events
Northern Virginia	1-Nov-2007	Dr. Joseph Guerci (IEEE Fellow): "Radar Horizons," 6:30pm at Mitre Corporation. See detailed announcement or contact Chapter Chair Tim Settle [t.settle AT ieee.org].
	8-Nov-2007	Dr. Matthew Latimer (Latimer, Mayberry & Matthews IP Law): "Biomedical Intellectual Property Challenges for Small Business and Government," 7pm at Mitre Corporation. See detailed announcement . Contact Paul Otto [potto AT ieee.org] or Charity Burd [charity.burd AT ieee.org].
Dallas, Texas	2-Nov-2007	Prof. Jose Principe (University of Florida): "Engineering the Brain Machine Interface," 11am at University of Texas - Dallas. See announcement for event details.
	5-Dec-2007	Prof. Ahmed Tewfik (University of Minnesota): "Biclustering and the Search for Group Biomarkers," 11am at University of Texas - Dallas. See detailed announcement .
Santa Clara Valley, CA	12-Nov-2007	Dr. Jun Xin (Xilient Inc): "Efficient Techniques for MPEG-2 to H.264 Video," 6:30pm at National Semiconductor (2900 Semiconductor Dr., Santa Clara, CA 95051). See chapter web site for more information.
Washington	15-Nov-2007	Prof. Doron Levy (University of Maryland): "Multiscale Registration of Noisy Images," 5:30pm at University of Maryland, College Park (Kim Engineering Building #1105). Contact Vice Chair Ramani Duraiswami <ramani@umiacs.umd.edu>.
Toronto, Canada	15-Nov-2007	Prof. Simon Haykin (McMaster University): "Cognitive Dynamic Systems," 3pm at University of Toronto. See detailed announcement or contact Karl Martin at [karl.martin AT ieee.org]

If you are interested in organizing a new SPS chapter, or participating in activities in a SPS local chapter near you, please check out [Local Chapter Resources](#). Additional questions and comments can be addressed to the [SPS Chapters Committee](#).

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6. New Initiatives and Trends

Mobile Broadband WiMAX Standard in a Nutshell

Mobile WiMAX, or worldwide interoperability for microwave access, is a wireless standard that introduces orthogonal frequency division multiple access (OFDMA) and other key features to enable mobile broadband services at a vehicular speed of up to 120 km/h. WiMAX complements the and competes with wireless local area networks (WLANs) and the third generation (3G) wireless standards on coverage and data rate. Learn more about the Mobile Broadband WiMAX Standard from [this article](#) by K.H. Teo, Z. Tao, and J. Zhang in the SPM "[Standard in a Nutshell](#)" column.

Quantum Dots in Imaging

Quantum-dot structures are "tiny" bits of matter—generally crystalline semiconductors—that restrict the motion of electronic charge carriers in all three geometrical dimensions. They are roughly spherical in shape and measure only a few nanometers. The defining characteristic of a quantum dot is its light-emitting or absorbing property. The September 2007 issue of SPM featured [an article](#) by E. Towe that follows up the recent development reported in the journal *Nature Biotechnology* and provides signal-processing readers an overview of the major techniques for producing quantum dots and applications of quantum dots in imaging. Check out this and other articles from the SPM "[In the Spotlight](#)" column.

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7. New PhD Theses

Ali Bashashati (University of British Columbia):

"Towards Development of a 3-State Self-Paced Brain Computer Interface System", September 2007

Advised by Profs. Rabab Ward and Gary Birch

Brain computer interfaces (BCI) aim at helping individuals with motor disabilities by providing them the ability to control devices such as wheelchairs and computers, using their brain activity only. The majority of BCI research to-date has focused on developing "synchronous" BCIs. These systems allow the user to affect control during specified time periods only. Self-paced (asynchronous) BCIs on the other hand, are designed to respond whenever the user intends to control the system, otherwise they remain in an inactive output state. This dissertation pursues two main objectives:

- 1) Improving the performance of the existing 2-state self-paced BCI system developed at the Neil Squire Society, Vancouver, Canada. Evaluation of this system on eight subjects showed mean true positive (TP) rates of 51.3% and 27.5% at false positive (FP) rates of 2% and 1%, respectively.
- 2) Designing the first 3-state self-paced BCI, i.e. a system that can recognize two different movements.

Results of the improved 2-state self-paced BCI shows a mean TP rate of 73.4% at the FP rate of 1%. Initial evaluations of the proposed 3-state self-paced BCI using the right and the left hand extension movements

shows promise with mean right and left TP rates of 42.2% and 51.9% at a FP rate of 1%.

Click [here](#) to download the dissertation, or contact the [author](#) for more information.

Giovanni Del Galdo (Ilmenau University of Technology):

"Geometry-based Channel Modeling for Multi-User MIMO Systems and Applications", May 2007

Advised by: Prof. Martin Haardt

This thesis deals with the modeling of wireless time variant frequency selective multi-user Multiple Input Multiple Output (MIMO) channels. To model accurately and efficiently the far-field antenna radiation patterns we use a descriptor based on vector spherical harmonics. This method achieves higher accuracy and leads to novel applications, among which the optimization of the calibration. The major contribution is the IlmProp, a geometry-based channel modeling framework which fills the gap between conventional directional channel models and ray-tracers. The IlmProp models the multi-path components explicitly by means of point-like scatterers. In this manner, the correlation in time, frequency, space, and between users evolves realistically in time.

Click [here](#) to download the dissertation, or contact the [author](#) for more information.

Interested in submitting or recommending a recent Ph.D. thesis?

Please prepare the following material and visit the [web submission site](#) to provide your input. Contact Associate Editor Prof. Alessandro Piva at <piva AT Ici.det.unifi.it> if you have any question.

(1) thesis author's information (full name, contact, current affiliation, URL if available), Ph.D granting institution, thesis advisor's name and contact information;

(2) title, URL, and a short summary of the thesis (100-150 words); and

(3) an email from the thesis advisor to Associate Editor at <piva AT Ici.det.unifi.it>, confirming that the author has already successfully defended the Ph.D. thesis and that a final version of the thesis has officially been submitted according to the Ph.D. degree requirements of the author's institution.

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8. New Books

Model-Based Signal Processing, by James V. Candy, John Wiley/IEEE Press, 2006.

[Book description from the publisher](#): This book develops the model-based approach in a unified manner and follows it through the text in the algorithms, examples, applications, and case studies. The approach, coupled with the hierarchy of physics-based models that the author develops, including linear as well as nonlinear representations, makes it a unique contribution to the field of signal processing. The text includes parametric (e.g., autoregressive or all-pole), sinusoidal, wave-based, and state-space models as some of the model sets with its focus on how they may be used to solve signal processing problems. Special features are provided that assist readers in understanding the material and learning how to apply their new knowledge to solving real-life problems.

Visit the [book's website](#) for detailed Table of Contents and ordering information.

Streamlining Digital Signal Processing: A Tricks of the Trade Guidebook,

edited by Richard Lyons, John Wiley/IEEE Press, 2007.

Book description: From a "dream team" of experienced signal-processing professionals, *Streamlining Digital Signal Processing* is very different from the DSP textbooks you may have seen and used. Edited by the SPM's own column editor for "DSP Tips & Tricks," the book offers tips, tricks of the trade, practical shortcuts, and clever real-world engineering solutions you didn't learn in school. The articles collected in the

book originated from contributions by practicing DSP engineers, and have undergone careful editorial review and incorporated feedback from the magazine's readers, and added more explanations, applications, and illustrations. These highly readable chapters cover an assortment of signal processing topics such as digital filtering, spectrum analysis, specialized signal generation, high-speed function approximation, and more. While rich in the specialized DSP tips and tricks that make it a valuable resource for experienced working engineers, this book also contains sufficient fundamental DSP theory and simple mathematics to make it accessible to students. This unique book bridges the theory-to-practice gap and gives practicing engineers and computer programmers the useful, real-life tips, and techniques that they need to make DSP hardware and software designs operate faster, with improved accuracy and increased computational efficiency.

Visit the [book's website](#) for the Table of Contents, a sample chapter, and ordering information. When ordering, enter the Promotion Code "ISPN7" to receive a 20% discount on the price of the book.

Books Featured in Previous Issues [\[details\]](#)

Algorithmic Information Theory: Mathematics of Digital Information Processing, by Peter Seibt, Springer Press, 2006.

Wavelets and Subband Coding, by M. Vetterli and J. Kovačević. Open Access Edition.

Speech Enhancement: Theory and Practice, by P. Loizou, CRC Press, 2007.

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9. Research Opportunities

Research Funding Opportunities in European Union

The Seventh Framework Program for research and technological development ([FP7](#)) is the European Union's chief instrument for funding research over the period 2007 to 2013. Of particular interests to the Signal Processing community is the Information and Communication Technologies ([ICT](#)) program, which are critical to improve the competitiveness of European industry and to meet the demands of its society and economy.

The ICT Program under FP7 is divided into the following [seven challenges](#) of strategic interest to European society: (1) Pervasive and trusted network and service infrastructures; (2) Cognitive systems, interaction and robotics; (3) Components, systems and engineering; (4) Digital libraries and content; (5) Sustainable and personalized healthcare; (6) Mobility, environmental sustainability and energy efficiency; and (7) Independent living and inclusion. In addition, there are support for long-term research via "[Future and emerging technologies \(FET\)](#)" and for horizontal actions, such as international cooperation.

New U.S. Research Funding Initiatives Featured in Previous Issues of E-News [\[details\]](#)

- "Expeditions in Computing" - [web link](#) at U.S. NSF
- "Cyber-enabled Discovery Initiative (CDI)" - [web link](#) at U.S. NSF; Letter of Intent due **30-Nov-2007**.

Postdoctoral Position at University of Kentucky

The [Multimedia Information Analysis \(MIA\) Laboratory](#) of the Center for Visualization and Virtual Environments at University of Kentucky has one opening for a postdoctoral researcher. The main responsibility is to conduct original research in developing privacy-enhancing video processing algorithms in

a distributed camera network. The focus will be on developing new algorithms for multi-camera object identification, tracking, and in-painting. Other responsibilities include writing scholastic papers, supervision of graduate students and preparation of grant proposals.

Candidates must have a doctoral degree in computer science, electrical engineering or related fields and an established publishing record. Ideal candidates should be highly motivated, have good communication skills and be willing to work in a team environment. Candidates should also be proficient at C++ programming and software development. The position is a one-year appointment starting immediately and is renewable based on performance and availability of funds. Salary will vary based on experiences. Candidates interested in this position should send their CV and a copy of their most representative publications to Prof. Sen-ching Samson Cheung at <cheung AT engr.uky.edu>.

Research Opportunities Featured in Previous Issues [[details](#)]

- Post-doc position at the Signal Processing Laboratory of Washington University in St. Louis, USA.
- R&D positions in Navigation and Wireless Terrestrial Communications at Universitat Autònoma de Barcelona (UAB) Spain.
- PhD Scholarships in Multimedia Signal Processing area at TU Berlin (Germany).
- Post-doc Position on Wireless Biomedical Sensor Network at National Hospital of Norway in Oslo and Norwegian University of Science and Technology in Trondheim.
- Vice Chancellor's Strategic Research PhD Scholarship at Victoria University of Wellington, New Zealand.
- Post-doc positions in Network Science at Army Research Laboratory (ARL), Adelphi, MD, USA.

Job Posting Portals

<http://careers.ieee.org/>

<http://jobs.phds.org/jobs/engineering/>

http://engineering.academickeys.com/seeker_job.php

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Contributors of articles in this issue:

Geert Leus and Nikos Sidiropoulos.

About the Inside Signal Processing E-Newsletter

Since April 2007, the IEEE Signal Processing Magazine has introduced a new form of publication - the Inside Signal Processing E-Newsletter. This monthly electronic newsletter will complement the bi-monthly Magazine to serve the members in the IEEE Signal Processing Society (SPS). Through email notification and expanded coverage on its website, the E-Newsletter will provide members with timely updates on:

- society and technical committee news,
- conference and publication opportunities, new books, and Ph.D. theses,
- signal processing related research opportunities, and
- activities in industry consortiums, local chapters, and government programs.

The Inside Signal Processing E-Newsletter is a gateway to reach out to signal processing professionals around the world. We invite you to contribute and share your news with tens of thousands of SPS members through this monthly electronic publication with fast turn-around cycle. IEEE members may manage their subscription of the email notification of the E-Newsletter and related SPS announcements at [this page](#). Please bookmark <<http://enews.ieee-spm.org>> for current and archived issues of the Inside Signal Processing E-Newsletter.

Submission Instructions - Contribution for the December '07 Issue Due November 20, 2007

Visit the [web submission site](#) to provide your input. Make sure that you include your name, affiliation, and email and phone contact information. Contributions submitted by **November 20, 2007** will be considered for inclusion in the **next issue** of the Inside Signal Processing E-Newsletter. Please contact the Associate Editors of the corresponding sections as listed below if you have questions. Your comments and suggestions on the new submission system are welcome.

Contact Information of the E-Newsletter Team

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Mihaela van der Schaar, *Associate Editor*, University of California, Los Angeles, USA (mihaela AT ee.ucla.edu)
News and activities of SPS Technical Committees, industry consortiums and international standards

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* Please replace "AT" in the email addresses with @.

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In-Depth Articles of E-News - November 2007

Special Report: MMSP'07 Held in Chania, Greece

The ninth IEEE International Workshop on Multimedia Signal Processing (MMSP) was held in Chania, Greece, on October 1-3, 2007. Hosted at the beautiful Panorama Hotel & Resort on the island of Crete, [MMSP'07](#) provided excellent conditions for brainstorming on, and sharing the latest advances in multimedia signal processing and technology in an inspired setting full of history, mythology, art, and natural beauty.



Following the examples of recent successful MMSP workshops, the organizing committee of MMSP'07 has continued and enhanced the interdisciplinary nature of the event, trying to increase participation in multimedia areas that have been previously underrepresented. A focused theme of MMSP'07 is Multimedia Interaction and Communication. A single-track technical program included 104 regular papers organized into seven oral and six poster sessions, along with two special sessions in the areas of multimedia for children users and biological multimedia signal processing, and a demo session. Six plenary and invited talks brought about additional excitement to the technical program, encompassing both emerging and established research areas of multimedia processing and communications.

Interested readers are invited to follow [this link](#) to access the plenary/invited presentations on "Multimedia Technology in Educational Applications" (Patti Price), "State of the Art and Future Directions in Musical Sound Synthesis" (Xavier Serra), "New Directions in Image and Quality Assessment" (Al Bovik), and "Brain-Computer Interfaces" (Touradj Ebrahimi).

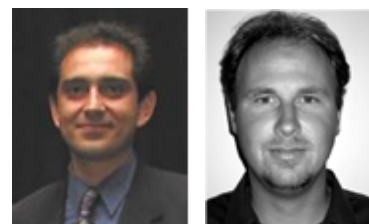
The MMSP workshop series is one of the main technical activities overseen by the Multimedia Signal Processing Technical Committee of the IEEE Signal Processing Society (see an [in-depth report](#) in May'07 E-News for details). Proceedings of past MMSP workshops can be found through this [IEEE Xplore link](#). The next MMSP workshop will be held in October 2008 in Cairns of Queensland, Australia, the gateway to the Great Barrier Reef. Please check out the [workshop website](#) for paper submission information, and its focused theme on Bio-Inspired Multimedia Signal Processing in Life Science Research.

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Exclusive Report from

Signal Processing for Communications and Networking (SPCOM) Technical Committee

Contributors: Nikos Sidiropoulos (SPCOM TC Chair) and Geert Leus (Vice Chair)



At its September 2007 meeting, the IEEE Signal Processing Society (SPS) Board of Governors approved a motion to add Networking to the scope and name of the Signal Processing for Communications Technical Committee (TC), which from now on is called the *Signal Processing for Communications and Networking Technical Committee* (but still abbreviated SPCOM TC for brevity). The rationale for this change primarily stems from a sustained and growing interest in our community for cross-layer SP research, ad-hoc networks, and sensor networks; including cross-layer resource optimization, protocol (network-distributed algorithm) design, and distributed coding / compression / estimation and detection. These topics are timely - and this is reflected in funding and cross-disciplinary research opportunities.

Though the IEEE SPS and Communications (COMSOC) Societies have evolved somewhat independently, the technical areas covered by the two societies are tightly intertwined. In fact, in most problems, it is impossible to tell where the signal processing ends and the communications technology begins, and vice versa. There are many well-established aspects of communication theory and algorithms which were primarily developed in SP (adaptive equalization, adaptive beamforming, blind equalization, signal

intelligence, and radar, to name a few). Driven in part by recent advances in cross-layer network design, there is nowadays considerable cross-fertilization between SPS and the communication networks community at the intersection of COMSOC and the Information Theory (IT) Society. The SPCOM TC is dedicated to exploring and illuminating the connections between these rapidly growing fields within the larger IEEE organization. Our technical interests include:

- coding, data compression, and information theory
- network-distributed signal processing, including distributed sensing, estimation, detection, coding, and compression
- channel modeling, estimation, and equalization
- multiuser, multicarrier, and multiple-access communications
- antenna arrays for wireless communications
- synchronization and timing recovery
- performance analysis, experimental studies and measurements
- signal processing and cross-layer aspects of ad-hoc networks, sensor networks, cognitive radio and dynamic spectrum access systems
- cross-layer resource optimization, including scheduling and queuing protocols

This is also a good chance to report on the activities of SPCOM TC. SPCOM is one of the large TCs in terms of ICASSP submissions, averaging about 450 paper submissions in the last few ICASSP conferences. Similar to other TCs, the members of SPCOM are responsible for ICASSP reviews and decision-making in the committee's areas of interest, including awards nominations to the Awards Board at the Society level, making recommendations on technical matters (e.g., maintaining pool of Associate Editor candidates, assessing proposals for technical co-sponsorship), and organizing the *Workshop on Signal Processing Advances in Wireless Communications* (SPAWC). The SPAWC series has been very successful; since 2003, SPAWC is organized on a yearly basis. SPAWC 2008 will take place at Recife, Brazil; see <http://spawc2008.org/> for the call for papers and other information.

The SPCOM TC has been very active in awards nominations, and our nominations went through in the vast majority of cases. The TC uses a rigorous and open process to select candidates for nomination, including several rounds of peer review, voting by the TC members, announcement of the results to the TC membership, and consensus voting at the end. The initial pool of candidates is usually identified by TC members, but we also accept nominations through open call. For paper awards, in particular, every SPCOM-related paper published in the previous year in TSP is "scan-reviewed" by a TC member, who recommends whether closer scrutiny is needed. If so, the paper undergoes peer review (3 reviews per paper). In the end, the TC votes to select a small subset of the strongest candidates, from which a final selection is made by voting. Successful nominations by the SPCOM TC in recent years include 6 Best Paper Awards, 6 Young Author Best Paper Awards, a Signal Processing Magazine Best Paper Award, 2 Meritorious Service Awards, and 1 Society Award.

The SPCOM TC is currently composed of 30 elected members; 16 work in North America (15 in the U.S., 1 in Canada), 13 in Europe, and 1 in Asia (Hong Kong). Our membership is very diverse in terms of national origin. There are currently two women on the TC, and our TC would certainly welcome more. An annual election for new members takes place every November. For more details about the activities and events of interest related to this TC, including full membership information and meeting minutes, please visit the [TC website](#).

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IEEE Signal Processing Magazine 2007 - Hosted by the [Digital Video and Multimedia Lab](#) at [Columbia University](#)
Inside Signal Processing E-Newsletter Hosted by the [Communications and Signal Processing Labs](#) at [University of Maryland](#)