



## From Admiration, Celebration, and Guessing to Innovation

**A**t the time of this writing (February 2010), I, just like many other colleagues, am finalizing my travel arrangements to attend the 35th International Conference on Acoustics, Speech, and Signal Processing (ICASSP) in Dallas, Texas, 14–19 March 2010. Of course, you are reading this editorial in May 2010, a few weeks or more after ICASSP. This sequence of events will hopefully (the best one can aim for!) make this editorial resonate. Over the past few days, I have been going through the various Web pages on the ICASSP Web site and the activities planned during that week in March; it is all exciting, very

exciting. Of course, those who have papers at ICASSP will attend to share their findings and results with other colleagues, and will conduct oral presentations or posters. But besides this main activity of presenting papers, I am looking forward to meeting colleagues and friends, discussing and exchanging ideas, listening to a well-planned series of plenary talks, attending several technical and special sessions that are most related to my own research, learning about the new trends and ideas, attending the IEEE Thematic Meetings on Signal Processing (THEMES), meeting new people, touring the show and tell event, and of course participating in various social activities, including the reception and the banquet. I feel ICASSP is our Society's annual cele-

bration, perhaps the digital signal processing (DSP) Davos?

I was looking for a title to this editorial, a title that captures how I felt when I went through the online ICASSP program, and I found inspiration while reading the title and the abstract of the first plenary talk by Dr. Ronald W. Schafer. The title of the talk is "Celebrating the Science and Technology of DSP." The last statement in the abstract is "The goal of this analysis is to provide a platform from which to admire and celebrate the past progress and make guesses about what the future might hold for the field of DSP." Indeed, as we enter a new decade, we are more optimistic than ever about the future of DSP and we have a

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TITLE, AUTHOR, PUBLICATION YEAR IEEE SPS JOURNALS	ABSTRACT	RANK IN IEEE TOP 100 (DEC–JUL 2009)						N TIMES IN TOP 100 SINCE JAN 2006
		DEC	NOV	OCT	SEP	AUG	JUL	
<b>SUPER RESOLUTION WITH PROBABILISTIC MOTION ESTIMATION</b> Protter, M.; Elad, M. <i>IEEE Transactions on Image Processing</i> , vol. 18, no. 8, Aug. 2009, pp. 1899–1904	This paper presents a new framework that leads to the same algorithm as the authors' prior work but with an approach that is much simpler and more intuitive.						67	1
<b>MIMO DETECTION METHODS: HOW THEY WORK</b> Larsson, E.G. <i>IEEE Signal Processing Magazine</i> , vol. 26, no. 3, May 2009, pp. 91–95	This tutorial article provides an overview of different MIMO detection approaches, in the communications receiver context.						80	4

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very successful history not only to celebrate and admire but also to provide us with the fuel to guess, innovate, and define the future—not only for DSP, but for the technology and the societies we all live in.

I wrote in my March 2009 editorial about the transformational phase that DSP has been going through. Both our Editor-in-Chief Li Deng, and our previous Signal Processing Society (SPS) President José M.F. Moura, wrote in various editorials in 2009 about defining “signals” and “processing” and the “cross-pollination in signal processing technical areas.” These new aspects, and to some extent transformational definition, of DSP become obvious when one views the technical program of ICASSP 2010. I wrote down various words from the technical program of ICASSP 2010 and here is the list I came up with: neural, engineering, new applications, radar imaging of interiors, social networks, mining, biomedical, multimodal mobile, smart cameras, body sensors, microlocal analysis, emotions, recovery, recognition, coding, real-time, audio, video, bioinformatics, estimation, enhancement, quality, array, systems, music, language, speech, acoustics, learning, perception, communications, adaptive processing, stereoscopic, 3-D, cognitive radio, statistical analysis, retrieval, tracking, net-

working, information theory, cooperative, sampling, modeling, synthesis, detection, sensing, machine learning, industrial applications, feature extraction, wireless, language and dialect, semantic, multi-channel, underwater, security, forensics, and watermarking. I could not include all key words in this editorial due to space limitations, but from this list of words,

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one can easily sense how DSP covers a broad spectrum of “signals” that are “processed” in many different “ways” to arrive at various “decisions” to be used within a “system” or by an “individual.”

We at *IEEE Signal Processing Magazine* work very hard to capture the essence of DSP and the prospective of the DSP future. One venue is the columns section of the magazine where we try to update you with the latest in many different aspects from education to applications and from lecture notes to news articles. In 2010, we are updating the purpose of

the “In the Spotlight” column. We would like to use this column to inform all our readers of special events and meetings that are of interest and importance to the SPS. Therefore, we welcome suggestions of events or meetings; consider this a request. Also, in 2009 we started a new column called “Social Sciences,” and per the success of that column and the positive feedback it generated, we plan to expand the column and publish it in every issue starting September 2010. It is also important to share with you some of the successes of our columns as a number of our columns have appeared in recent months in the list of top downloads in *IEEE Xplore*; this is also one of our columns (“Reader’s Choice”) that can be found in the first few pages of the magazine. We owe this success to all our readers and to all authors who contributed to our columns and forums. We thank you! And for those who we met at ICASSP, we say “It was great seeing you at ICASSP, and we look forward to a new decade full of successes and exciting contributions!” **SP**

