Innovating Our Magazine in the Global, Interconnected Information Age

Happy New Year! Thanks to the diligent work of our entire editorial team, the special issue guest editors, and the Society's staff members, *IEEE Signal Processing Magazine (SPM)* has made significant achievements last year. In the coming year, *SPM* has a greater opportunity for innovations on various fronts in the fast-moving global age with the emerging pervasive interconnectedness among people, information, and physical objects.

In the past year, *SPM* vigorously

expanded its outreach to the global readership. We launched the digital edition of *SPM*, which is delivered to all Society members worldwide via e-mail and with an easy click of a button by the reader. (Online collection of all electronic versions produced so far can be found in [1].) The *SPM* digital edition goes together with the Society's Content Gazette, ensuring the most timely and convenient electronic access of the content of *SPM* on a global scale. *SPM* also revamped its cover with cutting-edge, modern images, and established the well-received "Special Reports" column written by professionals on the emerging high-impact technologies that are

most relevant to our *SPM* readers; see the most recent article of this column in [2]. The e-Newsletter section of our *SPM* was also redesigned with a fresh look, facilitating the connections among all technical committees in the Society. In addition, it brings our readers and the Society closer together, with in-time delivery of Society news and publication/conference information.

In conjunction with our global outreach via the creation and light-speed delivery of the digital edition, we started another innovation last year by producing the first issue of a translated

Chinese reprint edition of *SPM*. In a recent article [3] in our eNewsletter, we introduced this edition and provided its online access [4]. This is the first time that IEEE has translated scientific and technical content from English into Chinese, in line with IEEE's recent global strategy focusing on Asia and the Pacific region. Since the birth of the Chinese edition of *SPM* in late September 2010, we have received overwhelming responses from our Asian colleagues, students, and engineers. Many of them have provided constructive feedback for improving future editions. From the preliminary surveys we have collected and analyzed so far, we see two clear and concrete benefits to the international readers of *SPM* for two largely separate groups. For the first group of readers, the translated edition helps them to read the scientific and technical content more efficiently and comfortably in their native language, given their non-English training and educational background at their current stage of the professional development. Second, for the group of international readers who believe English is the language of science and business, our translation helps them ramp up quickly from their accustomed reading/writing talents in their native Chinese language, as well as their first foreign language such as Japanese, to the more desired English skills. Some people from the second group surveyed specifically requested that *SPM* provide side-by-side translations of English and Chinese, with key technical terms clearly and authoritatively translated, especially for the classic papers from *SPM*. As an anecdote, during the early stage in creating the first Chinese edition of [4], we experimented with automated machine translation first, only to quickly switch to professional human translation. This makes us appreciate why "universal translation" is the "needs and wants" of the future rather than of the present; see [5] for a long list of future needs and wants to be enabled by signal processing technology.

We have to thank many volunteers, including the native-Chinese authors of the translated articles and their native-Chinese colleagues for their proofreading that ensured quality translation.

When I wrote my first editorial [6] two years ago at the beginning of my term as editor-in-chief, the world was in a deep economic downturn. Along with the optimistic spirit imbued in that writing, our technological society quickly returned to the modern and global unity where the cheerful life force reigns again. Not only does the world becomes more flat, but mobile devices and the associated modern communications with ubiquitous interconnectedness are also permeating and ruling much of our daily lives. We now see huge research and development investments on the "Internet of Things" or "Internet of Everything" on the world-wide scale. One tangible and now matured technology coming out of "Internet of Things" is the "Tag" technology. It allows a mobile-phone user to scan color barcodes attached to any physical object (e.g., printed pages in *SPM*) and automatically connect the user to online sites and other corners of the digital world. Combining the Tag technology with digital media can apparently benefit the readers and authors of *SPM*. For instance, imagine when you read a tutorial *SPM* article with a shortened derivation of mathematical formulas, you can use your mobile phone to immediately access a video lecture, a slide deck, or a technical report explaining the skipped steps and any other material related to what you are reading. You can bring a printed issue of *SPM* with you when you travel and watch the overview of its full articles or their individual sections with the aid of slides, voice, or video provided either by the authors and/or by their critics. As another example, rather than reading the static figures in *SPM* tutorial articles as you do now, the figures can become animated in your mobile device as accessed from the connected online source via the use of Tags. This will enhance the tutorial value of *SPM* articles in a dramatic way. Exploiting mobile connections between printed pages and the associated online digital media is one area of innovating *SPM* we are currently pursuing with the aim of maximizing the impact of *SPM* and the benefit to our readers.

In the most recent November 2010 issue of Content Gazette, Prof. Ali Sayed wrote about the significance of *SPM* ranking first among all 245 electrical engineering journals worldwide measured by the impact factor. Looking ahead, we have more innovations to make in the fast-changing modern age, and we will continue to take strides in the key areas as discussed above.

Within one week of publishing the printed November 2010 issue of *SPM*, I had received a number of strong positive comments on several high-quality papers in the issue, written by stellar researchers/educators intersecting machine learning and signal processing. They have made tremendous efforts on elaborating key concepts and popular techniques using the signal processing "language" and technical notations. Such precious materials should reach everywhere in the globe without a language barrier. Now, in your hands, you hold another significant special issue, with articles covering immersive communications with rich multimedia signal processing content. Immersion is another hallmark of the modern communication in our interconnected information age, and its importance cannot be overstated. I hope you enjoy reading this special issue, and I look forward to receiving your valuable feedback.

REFERENCES
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