



Bring Signal Processing to the Public

Over the years, signal processing professionals continue to step out of their usual sandbox and move into many new directions and exciting possibilities—language processing, information forensics, genomic signal processing, or biometrics, to name a few. It is clear to us, the signal processors, that what we do, and how well we do it, has an enormous and important impact on the world around us. The excitement of new opportunities, and our ability to contribute to progress and meet challenges, makes the IEEE Signal Processing Society (SPS) more relevant and places its members at the forefront of a significant endeavor in service to all.

To address these challenges, we continuously assess our activities; the SPS has been involved for at least the past dozen years in formal long-range and strategic activities. We seek the opinions of those who are well versed in our technical field such as at SuperForum of signal processing experts and pioneers that met in San Antonio last October. We test the waters of change as was done with the SAFE Workshop in Washington, DC, last April, addressing applications of signal processing to security and forensics, for example. We look to the future by drawing students into the conversation with experts and pioneers as was done at a special reception during ICIP 2007. We then make a small set of assumptions and create a set of action items that move those assumptions into the Society's mainstream as new products and services.

We can be proud of our achievements, but our ability to keep up our high level of productivity, as a Society and as signal processing professionals, is under constant strain. One reason is the general public's lack of knowledge and understanding of the meaning of signal processing and how it contributes to the bottom line of the technically enhanced and continually evolving environment affecting all humankind to some degree. How can

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such a vibrant field be so little known and so poorly understood, even by members of the engineering community, let alone the public at large? To quote former SPS President Don Johnson, "Signal processing is a stealth technology." The words signal processing are not part of the popular lexicon even though it is a major technology underlying many of the modern-day innovations—cell phones, digital televisions, MP3 players, digital cameras, medical imagers, versions of speech and video codecs, and radar, to name a few (think about that yellow first-down line on your TV screen throughout the football season)—that enhance our health, welfare, and enjoyment of day-to-day living. How concerned should we be about this? Is it just that we don't seem to get the recognition our work deserves, or does it go beyond our personal pride to the desire to shed relevancy on that work?

Perhaps recognition is sufficient; after all, who wouldn't want to feel appreciated? But a better understanding of the relevancy of SP may lead to more sustained support and investment and help attract young talent to our area. Our SuperForum participants suggested some out-of-the-box ideas such as publishing a *Signal Processing for Dummies* book (Any takers?); improving our Web presence to be more appealing, dynamic, and interactive (this is underway, and the new Web site may actually be rolled out before you read this message); providing open source materials (this is underway, as described in Past President Al Hero's November 2007 "President's Message"); creating a television series (in the vogue of Carl Sagan's "Cosmos" that was popular in the early 1980s or the more recent "Scientific Frontiers in America" hosted by Alan Alda). Some of these recommendations are quickly doable (and we immediately set about addressing those), while others are grand challenges requiring certain talents, time, and capital to pursue. But what else should we be doing to help the public understand the full meaning of the words "signal processing" and the wealth of opportunity they possess for all of the world's citizens?

That last question is not rhetorical; I hope you will send me suggestions about how to make signal processing comprehensible and to improve its visibility with the general public. I'll share some of your recommendations in future columns and hope that we may find ways of exploring the best of them within the SPS.

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