

Pérez-Neira, Marc Moonen, Tülay Ada-
li, K.V.S. Hari, and Shri Narayanan, the
Board of Governors, and various boards,
we wouldn't have been able to survive,
and actually thrive, during the past two
years, despite the tremendous challenges
and odds we faced. It was an honor to
serve with all of them. I will be eternally
grateful for their tremendous support,

dedication, and innovation. I would also
like to thank the editors and managers
of *IEEE Signal Processing Magazine*:
Robert Heath, Christian Jutten, Jessica
Welsh, and Sharon Turk for providing me
the opportunity to write a column in the
magazine and for their patience with me
as I was always tardy in submitting my
piece. My biggest regret is that I didn't

get a chance to travel and meet with all of
you across the globe. With so many great
minds actively involved in the Society,
our future can only be bright.



Athina Petropulu | IEEE Signal Processing Society President | athinap@rutgers.edu



Signal Processing in Our Digital Era

I am excited to start my service as the
IEEE Signal Processing Society (SPS)
president. I should note that I am the
first SPS president directly elected by the
SPS membership, due to the SPS Board
of Governors (BOG) urging a stronger
member voice in elections. This is a big
honor for me and I would like to express
my thanks to SPS members for their trust.
I write this article to introduce myself,
acknowledge key volunteers and staff for
their service, outline the activities I will
lead over the next two years, and invite
your comments and suggestions.

A few words about my personal journey

I was born and raised in Kalamata,
Greece, graduated from the National
Technical University of Athens, Greece,
and then moved to the United States for

a graduate degree at Northeastern Uni-
versity in Boston, Massachusetts. During
my Ph.D. degree, I was introduced to the
exciting area of signal processing (SP),
and after attending various SPS events
it became clear to me that SPS was the
community with which I would like to
be associated. I was drawn by SPS's vi-
brant conferences and workshops, where
I would get exposed to cutting-edge re-
search and receive feedback on my work,
the high quality of the publications, and
the presence of researchers of the highest
caliber, with whom I could meet at con-
ferences and draw inspiration. For all of
these reasons and for over 30 years now,
SPS has been my professional home.
Over the years, my research interests have
spanned the areas of statistical SP, system
identification, multiple-input, multiple-
output (MIMO) systems, cooperative
beamforming, physical layer security,
MIMO radar, spectrum sharing between
radar and communication systems, and

biomedical SP. I had the opportunity and
the honor to be involved in technical lead-
ership activities; I was editor-in-chief of
IEEE Transactions on Signal Processing,
general chair of the 2005 IEEE Interna-
tional Conference on Acoustics, Speech,
and SP (ICASSP), SPS vice president
(VP) of conferences, and was twice
elected by the SPS membership as BOG
member-at-large and, of course, as SPS
president-elect.

Acknowledgments

I would like to thank past SPS Presi-
dent Ahmed Tewfik for his leadership
and his vision. His presidency spanned
two very difficult years, marked by fear
of an invisible enemy that had us navi-
gate a completely uncharted territory.
Still, SPS came out very strong from
the COVID-19 pandemic, having dis-
covered new ways to improve its reach
and impact. It was great training for me
to be president-elect alongside Ahmed

Tewfik. I would like to thank retiring VP Technical Activities Tulay Adali for her leadership, especially in promoting the SPS Brain Initiative. I would also like to thank retiring BOG members Charles Casimiro Cavalcante, Zhiqian Tom Luo, Wing-Kin (Ken) Ma, Douglas O'Shaughnessy, Zhi Tian, and Rabab Ward, each of which brought a unique and valuable perspective for advancing SPS as a global community of scholars and practitioners.

I am very excited to welcome the new president-elect, Min Wu. I cannot resist pointing out that having women as president-elect, as well as president, is defi-

nately a first for SPS! I would also want to welcome Alle-Jan Van der Veen as VP Technical Activities, new BOG members-at-large: Xiaoli Ma, Anthony Vetro, and Hong (Vicky) Zhao, and regional directors-at-large: André L.F. de Almeida (Regions 7 and 9) and Tsung-Hui Chang (Region 10).

I would like to acknowledge the ongoing leadership of SPS VPs: VP Conferences Ana Isabel Pérez-Neira, VP-Education Shrikanth (Shri) S. Narayanan, VP Membership K. V. S. Hari, and VP Publications Marc Moonen. Their enthusiasm and novel ideas promise a great future for SPS going forward. I would also like to acknowledge SPS Executive Director Richard Baseil and his team of highly capable professionals, who work harmoniously with the volunteers and have the knowledge and tools to turn ideas into reality.

The SPS outlook of the future

Over the next two years, SPS volunteers and staff will work towards raising the visibility of SP, providing high quality publications, conferences, technical and educational activities, and keeping members abreast of the latest information and technologies.

SP is the brain of technologies that changed the course of history, e.g., the wireless phone, computer vision, robotics, medical imaging, speech pro-

cessing, just to name a few. SP is also in the heart of tools that are now revolutionizing our ability to extract information from data, like machine learning, bringing a unique perspective that promises to improve the interpretability and reliability of machine learning algorithms. Despite all of the above, for a long time, the SP field has been somewhat esoteric, not easy for the public to appreciate

enough. However, there is now a great opportunity before us that can change that perception. The COVID-19 pandemic has precipitated the digital transformation of almost every aspect of our lives, from the way we

communicate, conduct business, receive our education, and interact with health providers. The role of SP in technologies that support such transformation is at the front and center, and SP-able personnel are in high demand for maintaining and advancing those technologies. We need to leverage those opportunities to increase SP awareness. Better visibility will attract more talent to SP, and thus improve our chances to address our world's complex challenges.

In the publications arena, open access (OA) looms large, having the potential to allow unrestricted flow of knowledge to every corner of the world, and thus substantially boost scientific discovery. However, new financial models will need to be devised to make OA a viable option, assure that publishing is not limited only to authors who can afford to pay and sustain our publications operation. The SPS leadership team, with input from the membership, will be looking into various options, having in mind quality as a nonnegotiable principle. New trends are also in the horizon for our conferences. With the pandemic preventing us from physical gatherings, we discovered the power of virtual events, which allowed us to reach far wider audiences. While we are all looking forward to returning to face-to-face conferences and workshops, virtual components in our meetings will contin-

ue to offer ways to be far more inclusive than before. Of course, we need to find ways to encourage face-to-face participation, such as widening opportunities to interact with speakers, strengthening networking, expanding job recruiting events, and providing on-site hands-on educational opportunities with related certificates. We are also considering public outreach components to our conferences, that will socialize SP to high school students, college counselors, and to the general public. Both our publications and conferences will strive to increase our share of the data sciences and machine learning action, giving high priority to the unique element that SPS researchers and practitioners are best qualified to contribute to those fields.

I am very excited about our ongoing efforts to create new educational opportunities at all levels, starting from pre-college students to practitioners in need of reskilling or retraining. We will work better on engaging the industry to our activities. We are at the planning stages of an entrepreneurial forum that will create pathways for SP innovations to impact real world problems.

Geographic activities, through our Chapters, are an important part of Society operations. We continue striving to increase the value of SPS membership, locally and internationally. I am also excited about our plans and efforts underway to be more inclusive, to further diversify the SPS membership, and to create a welcoming environment for all who wish to join our community, independent of their gender, race, sex orientation, geographic origin, or socioeconomic status. Enabling unrestricted flow of talent to SP will infuse the field with a multitude of ideas and perspectives, all necessary elements for achieving innovation.

I look forward to sharing our progress and hearing from all of you about how to best design the SPS future. In the meantime, I hope you have a happy and exciting New Year, filled with good health and a lot of exciting SP discoveries!



SP

With the pandemic preventing us from physical gatherings, we discovered the power of virtual events, which allowed us to reach far wider audiences.