



Reaching Out to Members in the Middle East and India

As I am writing this article, I am wrapping up a trip as IEEE Signal Processing Society (SPS) president to Doha, Qatar (9–11 January), to speak at the 2022 IEEE Spoken Language Technology (SLT) Workshop, and India (12–16 January), for technical talks and meetings with local signal processing researchers and SPS local Chapter chairs.

Speech and language processing deals with speech recognition, text-to-speech synthesis, spoken language understanding, speech-to-speech translation, spoken dialog management, and many other areas that are relevant to a wide range of applications. The IEEE Speech and Language Processing Technical Committee (SLTC) is a vibrant segment of the SPS, encompassing the most active and accomplished researchers and technologists in the field. The SLT Workshop is a flagship event of the SLTC, bringing together researchers from academia and industry to discuss cutting-edge developments in automatic speech recognition and understanding. The 2022 SLT was held 9–12 January 2023 and was the first speech conference held in the Middle East and the first speech conference to be held in an Arabic-speaking nation. It was organized by well-respected leaders of industry and academia, with Dr. Ahmed Ali, Qatar Computing Research Institute, and Dr. Bhuvana Ramabhadran, Google, as general chairs.

Among the many firsts of the 2022 SLT was the SLT Code Hackathon

on the topic of low-resource speech and language technology and applications. The SLT Code Hackathon was open to anyone interested in speech and language technology, including researchers, programmers, user experience designers, practitioners, and enthusiasts. In-person participation was preferred, but remote participation was possible if at least one team member was local. Teams had three to six members. The 2022 hackathon chairs were Thomas Schaaf (3M M*Modal), Gianni Di Caro (Carnegie Mellon University in Qatar), Shinji Watanabe (Carnegie Mellon University), Paola Garcia (Johns Hopkins University), Mirco Ravanelli (Université de Montréal), Alessandra Cervone (Amazon), Mus'ab Husaini (Qatar Computing Research Institute), Harshita Diddee (Microsoft). This was a very successful event that attracted 97 participants from over 30 countries. Eighteen teams presented projects on the recognition of spoken dialects in different parts of the world (e.g., Africa and India) that are not well captured by existing speech and language technology tools. The projects were evaluated for their potential impact (social, research, and business), their degree of innovation, and how well they were implemented. I had the pleasure of serving as a judge and thoroughly enjoyed the over 3 h of presentations by very enthusiastic teams of students, from high-school students to Ph.D. students. It was amazing to see the energy and the talent of those students from all parts of the world. Kudos to the SLT chairs and the hackathon organizers, who conceived the hackathon idea and in-

vested great effort in making this event a big success. Hackathons, challenges, and competitions generate a lot of enthusiasm and are great vehicles to attract talent to the field of signal processing. Encouraging and supporting such events are among the priorities of the SPS. I also gave a talk at the 2022 SLT opening ceremony about the state of the Society, reinforcing the strong commitment of the SPS to serve SLT researchers and technologists.

While in Doha, I also visited various universities and met with colleagues working on signal processing-related topics, hosted by Prof. Erchin Serpedin. I gave technical talks at the Department of Electrical and Computer Engineering (ECE) of Texas A&M University Qatar (TAMU-Q) and Qatar University (QU) and interacted with many colleagues. I also gave a lecture to a capstone class on IEEE ethics and how one should be mindful of the effects of technology on people's safety and privacy, the propagation of stereotypes that hold women and underrepresented minorities back, and consequences for the environment. I had the honor of meeting with the dean of engineering of Hamad Bin Khalifa University (HBKU) as well as with several HBKU faculty, the vice president of research at Qatar University, and the president and the associate provost for academic affairs of the University of Doha for Science and Technology (UDST). I was given extensive tours of their facilities. I am thankful to all for their exceptional hospitality and was impressed with their efforts to stay at the forefront of research and education.



The 2022 SLT Hackathon participants, organizers, and judges.

Over the past 10 years, Doha developed a large state-of-art infrastructure to host the 2022 soccer World Cup. Many colleagues in Qatar are eager to leverage that infrastructure and be more involved in SPS conference organization in the future. The SPS membership in Qatar is not very high, definitely not as high as that of the IEEE Communication Society. We discussed the strong focus of the SPS on physical layer communications and how, with its conferences, publications, and educational materials, the SPS can help researchers understand the unique challenges that next-generation communication systems face at the physical layer. I certainly hope that we will see more member engagement in the future. Several colleagues expressed interest in the new SPS-curated educational content that provides certificates.

My India trip was filled with talks and meetings with SPS members and volunteers from academia and industry. Prof. K.V.S. Hari, past SPS vice president of membership, did a fantastic job in energizing SPS membership and SPS Chapters in India. He organized various activities to bring members together and meet with me during my visit. On 12 January, the SPS Bangalore Chapter hosted me at the IEEE SPS India Conclave, in Bangalore. I was pleasantly surprised to walk into a room of the IEEE India office, at the World Trade Center, Bangalore, full of SPS volunteers. Ten very enthusiastic SPS Chapter chairs gave me presentations on their Chapter activities and their plans for the future. It was a great session, which ended with a nice lunch at a nearby hotel. Many thanks to the IEEE India office team for all the arrangements. Later the same day, there was a panel discussion on “Advances in Signal Processing: Opportunities and Challenges.” The event was held in the Sarah Kailath Auditorium, which was built using the generous donation from Prof. Thomas

Kailath, Stanford University, a pioneering researcher, extraordinary educator, and technology leader in signal processing and other fields. The panelists included Santhosh Kumar [managing director, Texas Instruments (India)], Dr. Alok Nath De (chair, IEEE Bangalore Section; former corporate vice president and chief technology officer, Samsung Research; and the panel moderator), Ravikiran Annaswamy (president, IEEE Technology and Engineering Management Society, and founder of Numocity, an electric vehicle technology company), Dr. Geetha Manjunath [founder of Niramai Healthcare Analytix, which has developed radiation-free thermal imaging-based breast cancer detection technology using artificial intelligence (AI)], and myself. The discussion touched upon various signal processing aspects of system design in medical imaging, electric vehicles, radar and communication systems, and next-generation factories, among other applications. The importance of sensing, signal processing, optimization tools, and incorporating domain knowledge into AI/machine learning algorithms was highlighted. The need for a “systems approach” to problem solving was emphasized, which also means that a fresh look at the engineering curriculum is needed. Bangalore is viewed as the Silicon Valley of India, and this event brought together a large number of industry representatives interested in signal processing who had to fight heavy traffic to reach the venue at the end of their working day. I was impressed with their strong interest to stay connected with the signal processing research community. Following the panel, I gave a presentation on the state of the SPS and the opportunities the SPS provides to members for their career development.

On 16 January, a big gathering of K-12 students and their teachers was organized by Women in Signal Processing



Enjoying the hospitality of Qatar colleagues in Doha. From left to right: Dr. Rachid Benlamri (VP UDST), Dr. Athina Petropulu, Dr. Ali Ghrayeb (TAMU-Q), Dr. Joseph Boutros (TAMU-Q), Dr. Erchin Serpedin (ECE chair, TAMU-Q), Dr. Haithan Abu-Rub (TAMU-Q), Dr. Ridha Hamila (QU).

(WISP) at the Indian Institute of Science (IISc) in Bangalore. A WISP member interviewed me about my career path, why I chose signal processing as my research area, and what the potential career paths are for a student with signal processing experience. Later the same day, I gave the inaugural talk at the ECE-IISc–Distinguished Visitor Program on the topic of dual-function radar communication systems. The talk as well as the follow-up reception were very well attended by faculty, students, and alumni.

During my visit in India, I also visited the Indian Institute of Technology Delhi, hosted by Prof. Monika Aggarwal, the IEEE SPS India Conclave, Delhi and the Women in Engineering Delhi Section, where I gave a technical talk and also interacted with many faculty and students. Following my talk, there was a poster session, where students presented work related to signal processing. During that time, we honored Prof. S.C. Dutta Roy, 2021 recipient of the SPS Regional Distinguished Teacher Award, which recognizes individuals who have excelled in the teaching of signal processing. With Prof. Aggarwal, we traveled to Agra, where we visited the Dayalbagh Educational



The panel discussion on “Advances in Signal Processing: Opportunities and Challenges” at the IEEE SPS India Conclave, Bangalore.



The IEEE SPS India Conclave, Delhi.

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Institute (DEI), an open-air-classroom university focused on sustainable practices, self-discipline, and spirituality. DEI has invested in significant outreach to the neighboring low-income community. In Agra, we had the opportunity to experience the unparalleled beauty of the Taj Mahal. In all places, I was treated to outstanding hospitality, including great Indian food and warm social interactions.

Everybody in India is extremely excited about ICASSP 2025, to be held in Hyderabad. The ICASSP 2025 machinery is already in motion, preparing to offer a great technical program and also welcome the SPS community in India. I am sure the ICASSP 2025 attendees will be in for a great treat.

It has been a great pleasure and honor for me to be greeted with such warmth and enthusiasm by SPS members in Qatar and India. It was an opportunity to experience the great name recognition and respect SPS enjoys around the world and also to feel the strong bond that connects SPS members. We parted with the wish that we will meet again at the 2023 ICASSP, in Rhodes, Greece, this coming June!

Acknowledgment

Special thanks to Prof. Erchin Sepredin, chair of Electrical and Computer Engineering at TAMU-Q, for organizing my Qatar visit and Prof. K.V.S., IISc, and Prof. Monica Aggarwal, IIT Delhi, for organizing my India visit.