2020: A Journey of Discovery, Challenges, and Opportunity

Leila De Floriani, 2020 IEEE Computer Society President

Collectively, despite disruption and stress related to the COVID-19 pandemic, we continue to make progress on our goals. The IEEE Computer Society (CS) members and contributors have discovered new ways to learn and teach, conduct research and publish, attend and facilitate virtual conferences, look for and implement computing-based solutions to health-care and logistics emergencies, and most impressive of all, support and connect with one another in this time of shifting priorities and increasing physical isolation. Thanks to our members' resilience and resourcefulness, the CS has continued to make meaningful contributions and create new opportunities.

Though we prepare for the future, there are always surprises and unexpected challenges. It is in these moments that our humanity and compassion, not to mention our intellect and resolve, are tested and shown. Through such experiences, we come to discover the nature of ourselves, our communities, our leaders, and our world in meaningful new ways.

In the days and weeks that led up to and followed the enormous global impact of COVID-19, whatever we may have thought or known about the course of the future was very likely filled with holes. Nothing about this was familiar to any of us.

As I write this, everything has changed in our own lives—we are now smart working, limiting our travel, and experiencing much uncertainty about what the future will look like. So, it is more important than ever to understand our members' needs in the context of the challenges we are all facing in our homes and communities during these difficult times.

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CRISIS AND OPPORTUNITY: A PARTNERSHIP

Of course, as engineers, teachers, scientists, programmers, and students, our members know firsthand that it is only through problems and crises that new solutions and opportunities arise—typically by bringing diverse groups of people and a variety of resources together.

The IEEE Computer Society's (CS's) focus has always been to bring our members together to provide venues for collaboration as well as sharing knowledge. The key services and activities we offer have moved to virtual platforms, and we rely on them in new ways to keep us connected with the information and resources we need for our work.

To ensure our members had access to the services and tools they needed, the CS offered free access to all educational courses, 100 free downloads from across the entire CS Digital Library (CSDL), complimentary access to the new CS Distinguished Lecture Series, and free access to career-building webinars at globally accessible times.

CONFERENCES GO VIRTUAL

Conferences have a fundamental importance in computer science and engineering, and in many technical areas, they are the most diffuse publication venue. Recognizing this fact, the CS leadership and staff worked to ensure conference organizers could successfully go virtual. By identifying best practices, establishing virtual conference case studies, developing a platform-selection comparison chart, and ensuring adequate training through webinars, we worked closely with our organizers and members to keep these important events on track.

Virtual conferences have several benefits, such as greater flexibility in content delivery, better cost-effectiveness, and reduced costs for attendees and authors. Among the benefits we have seen as conferences have gone virtual is the large increase in the number of attendees, but even more importantly, there has also been a profound geographic expansion in terms of where our attendees are located throughout the world.

We noted an increase in gender diversity as well, and we anticipate this will continue in the future. Empowering more and more of our conferences to be offered in a hybrid mode—partially in person and partially virtual—has important opportunities for expanding them to new communities.

Planning for such development is a challenge for this and incoming years. Indeed, as this has been an unplanned experiment of sorts, we will continue to monitor their success and effectiveness through attendee feedback and survey data.

OUR PRIORITIES ARE RESILIENT, TOO

The CS has always focused on quality. During uncertain times, people from all walks of life fear an erosion of quality and safety and look for businesses and institutions that offer reassurance and stability that come from a solid reputation. Throughout 2020, as president of the CS the core issues of importance for me included increasing diversity and inclusion (see "Creating a Diversity and Inclusion Committee"), open science and open access (OA), and enhancing member and volunteer engagement. These goals are pursued with the fundamental help and continuous support of the 2020 Vice Presidents William Gropp, Sy-Yen Kuo, Fabrizio Lombardi, Riccardo Mariani, and Yervant Zorian (see "2020 Vice Presidents"); of the 2020 Treasurer David Lomet; of the 2020 President-Elect Forrest Shull; of the 2020 Past-President Cecilia Metra; and of the entire CS staff.

Increasing Diversity and Inclusion
For the CS, our impact and our success rely on contributions from our

CREATING A DIVERSITY AND INCLUSION COMMITTEE

To ensure widespread coordination and promotion of such activities across the Society, the CS is in the process of establishing a Diversity & Inclusion Committee by amending its bylaws (https://www.computer.org/volunteering/boards-and-committees/resources/bylaws).

The description of the committee is as follows:

Section 11: Diversity & Inclusion Committee

The Diversity & Inclusion Committee shall foster an environment at the Society in which all individuals are encouraged to participate and engage in Society activities and programs without regard to gender, race, age, national origin, sexual affiliation, gender identity, gender expression, affiliation, and other demographic factors. The Diversity & Inclusion Committee shall coordinate and promote activities within the Society that further the mission to serve and engage underrepresented groups in computer science and engineering. The Diversity & Inclusion Committee shall consist of members as defined in the IEEE Computer Society Policies & Procedures Manual.

2020 VICE PRESIDENTS

The following members who serve on the CS's program boards this year are as follows:

- » **Member and Geographic Activities Board:** Yervant Zorian
- » **Professional and Educational Activities Board:** Sy-Yen Kuo
- » **Publications Board:** Fabrizio Lombardi
- » **Standards Activities Board:** Riccardo Mariani
- » **Technical and Conference Activities Board:** William Gropp.

The CS's elected Board of Governors members are listed at https://www.computer.org/volunteering/board–of–governors/members.

If you are interested in learning more about or serving on the CS's boards or committees or running for an elected position, please visit: https://www.computer.org/volunteering/society–leadership.

members. However, we must do more to ensure that the voices of our authors, attendees, leaders, editors, volunteers, and members reflect the abundant diversity of our time and our world. By increasing participation from historically underrepresented groups and regions and forming partnerships with industry practitioners, we enrich our profession through a more diverse and inclusive culture.

It is important that the CS establishes and leads with this culture for the benefit of our membership and volunteers as well as computing at large—it is essential for the success of our field. As we build our success in this area, we look forward to broad, positive changes in governance, conferences, editorial board membership, member engagement, awards, and Fellows programs.

In addition, it is critical that we define goals and plans for achieving greater diversity and inclusion inside the CS. To that end, one of our first objectives was to provide leadership development opportunities and see a broadly diverse slate of candidates for the CS Board of Governors and other leadership positions. Thanks in large part to the efforts of our Nomination Committee, I am proud to say we had success in this, with the 2021 slate of candidates

being the largest and most diverse we have seen in several years.

Our efforts this year will help us to continue to define and implement the best and most effective practices for improving diversity and inclusion. We launched a new effort to feature the achievements of prominent female scientists and engineers through interviews to inspire students and professionals from all walks of life. We also work closely with the IEEE and IEEE Women in Engineering as they continue to expand diversity and inclusion activities.

Publications: Open Science and OA

In 2020, the CS launched *IEEE Open Journal of the Computer Society* (*OJ-CS*), a gold-level OA publication that is fully compliant with Plan S. *OJ-CS* represents a diversification for those authors seeking OA to their original works. *OJ-CS* is considering articles in topical areas relevant to the mandate of the CS while offering an accelerated peer review process of the highest quality.

We will be working toward models for conference proceedings and conducting pilot studies in partnership with some of our communities. The CS has hybrid OA models for most of our journals, and we recently expanded the hybrid model to magazines. In

addition, the CS is currently increasing its presence in areas of broad impact, as, for instance, in the area of artificial intelligence through cosponsorship in the new *IEEE Transactions on Artificial Intelligence.*

Similarly, we are exploring activities in open science. Making data and software tools open as research products helps to promote research reproducibility. This is an area that the CS has taken the lead on within the IEEE, through pilot cases in conferences and transactions. We are developing a road map based on the recommendations of the National Academies of Sciences, Engineering and Medicine, which includes tools to support reproducibility and the definition of revenue models.

Enhancing Member and Volunteer Engagement

Our organization is run by volunteers, from the editors of our periodicals to the conference and technical committee chairs, to the chapter chairs, so ensuring our contributors and volunteers have a voice—and know that they have this voice—in shaping and influencing the offerings and overall direction of the CS is essential. We are always looking for ways to spark interest in members so they engage in and lead Society activities. If we are able to expand and diversify our new volunteer base, we are creating a valuable pipeline of future leaders for the Society.

To better serve our members, we will expand our successful Distinguished Speaker Program (formerly the Distinguished Visitor Program), improving the diversity of the speakers, expanding the topics and areas the speakers cover, and empowering our speakers to participate virtually. We are also working on a multilingual translation program for our website to engage with our non-English-speaking members around the world and on developing a new recognition program to honor those members who have made outstanding technical and service contributions to the computing field and to the Society.

The most complex of our efforts is to reform Society governance. Our goal is to increase the bottom-up participation of our volunteers in decision making and policy development by having our volunteer leaders—the editors in chief of our periodicals and technical committee chairs—elect representatives to our Board of Governors. We hope to continue to expand this thinking so that our leadership has all of the benefits and insight that our Chapter chairs, editors, and conference leaders can offer.

We entered 2020 very confident in our financial stability, thanks to hard work and tough decisions throughout 2018 and 2019. With the major economic pause due to quarantine, COVID-19 quickly wreaked havoc on our operations and the cadence with which we operate.

Flexibility and adaptability to changing conditions and economic pressures will be of primary concern over this and the next year. Also, emerging virtual and hybrid models for conferences, the changing nature of technical publishing, and the evolving characteristics of our membership continue to pose new questions and challenges for how best to maintain and build on our financial health in the years to come. We plan to explore relationships with external sponsors and other organizations and communities to help pursue new initiatives and existing activities. I look forward to continuing my work with the rest of the CS leadership, the CS staff, and other contributors to advance these projects and more.

I also want to hear from you. What does the CS mean to you? How can we best work together in these challenging times to ensure that the Society offers many valuable resources for you while also advancing the field of computer science and engineering? C

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