

# COMPSAC 2021 in Review

Sorel Reisman , California State University, Fullerton, CA, 92831, USA

July 12, 2021 saw the start of the Computer Society's (CS) signature Computers, Software, and Applications Conference (COMPSAC). COMPSAC is an annual, week-long forum for computer science and information technology professionals and researchers from around the world to network and share their recent research. Until the onset of the pandemic, the conference cycled annually from Asia to North America to Europe. Unfortunately, for yet a second year—and we hope the last—this year's rendition of the 45-year-old conference had to be conducted virtually, essentially disrupting the cycle. 2021 was a special year for COMPSAC as it was held during the Computer Society's 75th anniversary year.

As I noted last year in my *IT Pro* article, "Conference Recovery During a Time of Disaster",<sup>\*,1</sup> decision-making related to real, virtual, or hybrid conference planning can be very "challenging." And as the Standing Committee Chair, the person responsible for defining conference logistics, I can attest that planning a virtual conference is not easier than planning a "real" one. Consider, for example, that on July 12, my COMPSAC 2021 email folder contained 4,000 emails—about 1,000 more than at the same time last year and about 1,400 more than the year before. By the last day of the conference, I had received 500+ more!

So, why so many emails, what are they about, and who are they from? Certainly, there are so many more because we have had to replace in-person planning meetings with all-electronic alternatives. And aside from the few complaints from CS and non-CS members about some of the bad planning decisions I'm told I make, many are from past and current conference attendees asking about *next year's* dates and venue! Most, though, are from the incredible international group of volunteers who make the conference happen. Together with their cadres of reviewers, these folks, in record time, reviewed and accepted about 20% of our 1,500 submissions.

COMPSAC is organized in 12 "symposia," elsewhere known as conference "tracks." Each of these is similar to a mini-conference within the main conference, each overseen by volunteer chairs, each with its own committees and groups of subject matter expert reviewers. Needless to say, each also has different and sometimes conflicting priorities, all of which result in more emails to me.

Despite all that, COMPSAC's programs are increasingly organized by what has evolved into a dedicated "family" of friendly volunteers coordinated by the general chairs. This year the chairs were Edmundo Tovar (IEEE Education Society President), Cecilia Metra (IEEE Computer Society President Emerita), and our longstanding volunteer (and my fellow Canadian) Mohammad Zulkernine. Professor Z. has also agreed to continue to serve as ongoing Standing Committee Second Vice-Chair. First Vice-Chair, essentially COMPSAC's COO, is Sheik Iqbal Mohammad—no relation to Professor Z.—as far as I have been able to ascertain!

## NEW IN 2021

The COMPSAC 2021 virtual conference differed from COMPSAC 2020 in some significant ways. This year, we contracted with the virtual conference company Underline whose platform made the conference more rewarding for attendees, enabling richer author presentations and incorporating social networking opportunities not previously available. For example, every accepted article was accompanied by a video presentation. All were downloadable from the online program, later available, with the conference proceedings, in Xplore. All sessions (groups of articles) contained threaded discussions where registrant/author discussions could occur before, during, and, with articles and videos, until about 30 days after the conference.

Another program that we continued this year aligns directly with the IEEE's search for new publication strategies to counter the adverse budgetary effects of the Open Access movement. One of IEEE's considerations is to increase the number of journal articles in Xplore by facilitating the transfer of accepted conference articles to journal publications. Journal publications generate more downloads from Xplore than conference articles do, producing more

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revenue for IEEE and Operating Units (OUs) such as the CS.

COMPSAC has, for several years, including 2021, encouraged and assisted authors of select articles in transferring their submissions to select IEEE journals. This CJ program (Conference/Journal, formerly C1J2) continued this year. Our parallel JC program (Journal/Conference, formerly J1C2) solicits submissions from authors of previously published research. Those solicitations request that authors provide brief descriptions of proposed extensions to their previous work. Thus, they can obtain, from conference attendees, input/comments/suggestions about their future plans. Because of their popularity, both programs will be continued again the next year.

This year, a significant change from 2020 was the switch from Zoom, for live sessions, to Underline's Open Stage platform. Zoom session management in 2020 required a considerable amount of volunteer participation to manage those live sessions. Open Stage was a much superior platform for the three plenary keynotes and five panel sessions (see Table 1) organized by the Computer Society's past president, Jean-Luc Gaudiot. All the Open Stage real-time sessions provided attendees with live Q&A sessions with the speakers/panelists. And all sessions were recorded and available in Xplore as part of the conference proceedings.

IEEE President and CEO Kathy Land kicked off the conference by painting the IEEE "landscape," providing us with an overview of the Institute, its policies and strategies related to membership, volunteer activity,

and society in general. Subsequent keynote sessions ranged from what I call the "microscopic" to the "macroscopic." For instance, at the "microscopic" level, Computer Society President Emerita Cecilia Metra's clear explanations of challenges in developing autonomous systems stemming from semiconductor circuit-level issues. At the "macroscopic" level, Computer Society President Forrest Shull explained how software engineering has changed over the decades, current challenges, and possible future ones.

The plenary panels, in which it was noted that this year's COMPSAC included 14 past and current Computer Society presidents, addressed topics of: 1) employment and publication challenges in our pre- and post-pandemic world; 2) IEEE membership and volunteer opportunities; and 3) virtual and augmented reality futures—all with underlying AI and VR implications. Of course, one of the more noteworthy sessions, especially to readers of *IT Pro*, was the panel, Publications of the Future, organized by *IT Pro's* Editor-in-Chief, Irena Bojanova.

## STUDENT PROGRAMMING CONTEST

This year COMPSAC launched the "1st Annual Student OER Contest" (<https://ieeecompsac.computer.org/2021/oer-contest/>). Open Education Resources (OERs) are online objects that can be used/reused, under certain conditions, for teaching, learning, or research ([https://en.wikipedia.org/wiki/Open\\_educational\\_resources](https://en.wikipedia.org/wiki/Open_educational_resources)). The competition, which received submissions from the broadest range of IEEE Regions, is an offshoot of work

**TABLE 1.** COMPSAC 2021 plenary sessions.

	Topic	Speaker/Panel Chair
<b>Speaker</b>	IEEE in an Internet Dominated World	Susan K. (Kathy) Land, 2021 IEEE President & CEO, 2009 IEEE CS President
	Safety and Resiliency Challenges for Highly Autonomous Intelligent Systems	Cecilia Metra, 2019 IEEE CS President, University of Bologna
	Envisioning the Future of Software Engineering	Forrest Shull, SEI, 2021 IEEE CS President, Carnegie Mellon
<b>Panel</b>	COMPSAC 2021 President's Panel	Steve Diamond, 2003 IEEE CS President, Managing Director, Picosoft
	Career Pointers from Computer Society Leadership Panel	Roger Fujii, 2021 IEEE TAB Vice President, 2016 IEEE CS President
	Deriving Past, Present, and Future Tech to More Intelligent and Resilient Digital Realities for a Collaborative World Panel	Kathy Grise, IEEE Senior Program Director, IEEE Future Directions Leader
	Future of the Workforce Panel	Dejan Milojicic, Distinguished Technologist, Hewlett Packard Labs, 2014 CS President
	Publications of the Future Panel	Irena Bojanova, NIST, IEEE <i>IT Pro</i> Magazine EIC

done by Henry Chan.<sup>2</sup> Professor Chan is the co-chair of the Computer Education and Learning Technologies (CELT) symposium.

The contest winners were: First Prize—Learning Computing by Card Magic, by Caiqi Zhang, The Hong Kong Polytechnic University; Second Prize—VerilogMaster, by Ritika Paliwal, Rushikesh Shendare, Biral Pradhan, and Pratik Solav, National Institute of Technology Warangal, India; and Third Prize—Op-pymize.upn by Nathalia Montero Gómez and Andrés Santiago Jiménez Guzmán, Universidad Pedagógica Nacional de Colombia. Contest rules required that submissions be submitted/hosted in the Multimedia Educational Resource for Learning and Online Teaching (MERLOT: [www.merlot.org](http://www.merlot.org)) repository for review by an international team of higher education CS and IT instructors. These activities were coordinated by Edmundo Tovar (COMPSAC 2021 General Chair).

Also, in support of younger colleagues, COMPSAC once again hosted a Special Session of the IEEE Honor Society, Eta Kappa Nu (HKN). The panel, *Working in the IT World: A 20+ Years Overview*, was organized by the Mu Nu Chapter (Turin, Italy), in collaboration with the Mu Tau (Tokyo, Japan), Nu Alpha (Madrid, Spain), and Nu Beta (Madrid, Spain) chapters.

## WHAT ABOUT THE FUTURE?

Even as we launched, conducted, and concluded COMPSAC 2021, planning for COMPSAC 2022 had been

long underway. We were very excited to announce that the Politecnico de Torino agreed to host us again in Torino, Italy (June 22–July 1)—assuming that a “real” conference can be held next year. Preliminary information can be found on the 2021 conference website ([www.compsac.org](http://www.compsac.org)). And believe it or not, we’ve initiated discussions with a potential venue for 2023. So plan your research accordingly and prepare to present it at COMPSAC 2022!

## REFERENCE

1. S. Reisman, “Conference recovery during a time of disaster,” *IT Professional*, vol. 22, no. 4, pp. 4-7, Jul. 2020, doi: [10.1109/MITP.2020.3004194](https://doi.org/10.1109/MITP.2020.3004194).
2. H. C. B. Chan, Y. H. Ho, E. Tovar, and S. Reisman, “Enhancing the learning of computing/IT students with open educational resources,” in *Proc. IEEE 44th Annu. Comput., Softw., Appl. Conf.*, 2020, pp. 113–122, doi: [10.1109/COMPSAC48688.2020.00024](https://doi.org/10.1109/COMPSAC48688.2020.00024).

**SOREL REISMAN** is Professor Emeritus of Information Systems at California State University, Fullerton, CA, USA. He is the IEEE COMPSAC Standing Committee Chair, *IT Pro* Advisory Board Chair, member of the IEEE Publication Services and Products Board (PSPB), member of the TAB Strategic Planning Committee and the Xplore Platform Advisory Committee, and President Emeritus of the IEEE Computer Society (2011). He is a Senior Member of IEEE. Contact him at [sreisman@computer.org](mailto:sreisman@computer.org).

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