



COMPSAC 2017: Highlights

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Here's a brief highlight if you missed it. The 41st annual Computers, Software, and Applications (COMPSAC) Conference, hosted by Politecnico di Torino from 4–8 July, was a great

meeting. This year's conference theme, "Building Digital Autonomy for a Sustainable World," along with the venue of Torino, Italy—the center of automobile excellence in Europe—were an appropriate and relevant forum

for focusing on emerging autonomous automotive and related technologies. The conference gala banquet held at the Museo Nazionale dell'Automobile, a must-see attraction for anyone visiting Torino, was a special event that

highlighted the messages of the five-day conference.

About COMPSAC

If you aren't aware of it, COMPSAC is the IEEE Computer Society's signature conference—the international forum for academia, industry, and government to discuss research results and advancements, emerging problems, and future trends in computers, software technologies, and applications. Its mission is to serve the professional interests of all our members, both young and old, those new to the profession and well-established researchers and practitioners.

The conference program revolves around 10 symposia (tracks), and includes keynote addresses, research papers, industrial case studies, plenary and specialized panels, fast abstracts, a doctoral symposium, poster sessions, and workshops and tutorials on emerging and important technology and technology-related topics. The conference moves its annual venue from Asia, to the Americas, to Europe, and then cycles back. This year's conference was in Europe, and sponsors were the IEEE CS, the IEEE Big Data Initiative, IEEE Green ICT, the Associazione Italiana per l'Informatica (AICA), and the special platinum supporter, Reply (www.reply.com).

Conference Highlights

This year's conference speakers, panels, and presentations, focusing on the theme, addressed the changing world emanating from autonomous technologies. Once the lore of science fiction, we now embrace billions of automated processes, functioning under the control of computer systems. As we enjoy the advantages they provide, we can't help but wonder:

What will be the next major technical innovations, and where might they lead us? We've seen conventional automobiles become self-driving cars, human-directed systems become adapted ones, and human services enhanced by robotic services. Clearly, the rate of movement from physical to cyber-enhanced domains is rapid and increasing, initiating ever-more exciting innovations in computers, software, and applications.

The conference provided a forum for in-depth presentations and discussions of the technical challenges, successes, and failures of moving from traditional, person-centered, and person-directed activities and services to those that are the focus of autonomous systems. Sessions included

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topics and issues related to autonomous computing, wearable computing, the Internet of Things, social networking, cross-domain data fusion, privacy, security and surveillance, cloud and fog computing, big data, physiological computing, self-aware and self-expressive systems, adaptive learning and teaching, and emerging architectures and network issues that affect all these developing, technology-driven innovations.

This year, almost 350 attendees from 35 different countries participated in more than 100 presentations, reviewed by more than 400 reviewers.

Keynotes

The program featured three internationally acclaimed keynote speakers: Francesco Profumo,

former Italian Minister of Education; Alberto Sangiovanni Vincentelli, professor at the University of California, Berkeley; and Flavio Bonomi, founder of Nebbiolo Technologies. These speakers presented their new perspectives on the cultural and social implications of autonomous systems, fog computing, and Internet technologies. (If you are unfamiliar with these people, google each for a fuller appreciation of their contributions to computer science, computer engineering, and IT.)

Panels

In addition to the general program (www.computer.org/cms/compsac/2017/Program_web.pdf) the conference featured special plenary sessions (visit www.computer.org

[/web/compsac2017/panels](http://www.computer.org/web/compsac2017/panels)). These included

- “Future Challenges in Security,” chaired by Elisa Bertino, Purdue University;
- “e-Health,” chaired by Sheikh Iqbal Ahamed, COMPSAC Steering Committee Chair, Marquette University;
- “Internet, Industry, and Society,” chaired by Juan Carlos De Martin, Politecnico di Torino, Italy;
- “Future of Computing,” chaired by Stephen S. Yau, Arizona State University; and
- “Fog Computing and Networking—Technology Drivers and Impacts,” chaired by Tao Zhang, Cisco Systems.

The 2017 conference was also notable for including other topics

important to CS and IEEE members. As a follow-on to the first Young Professionals program started last year at COMPSAC in Atlanta, this year, about 75 Young Professionals were treated to a special plenary session entitled “Publication Etiquette and Ethics: Things You Should Know Before Submitting Your Next Paper.” Professor Gianluca Setti, past vice president of the IEEE Publications Services and Products Board, conducted the session.

The program also included a special panel session for younger participants by promoting IEEE’s Honor Society, Eta Kappa Nu (HKN). More than 30 undergraduate and graduate students attended a panel session organized

having their work reach broader audiences and share their research for others to build on. Last year, we introduced the C1J2 program, wherein we recommended some conference papers for consideration for publication in journals of the IEEE CS and Information Processing Society of Japan (IPSJ). This year, in addition to continuing this program, we introduced the first-ever J1C2 presentations, in which authors presented extensions to previously published work. This new program gives those authors a friendly forum to explore with colleagues their plans, intentions, hopes, and so on for extending their previous research in new directions.

What are the technologies enabling these changes? How far can these partnerships go? What will be our future as we deploy more and more “things” on the IoT to create smart cities, smart vehicles, smart hospitals, smart homes, smart clothes, and so on? Will humans simply become IoT devices in these scenarios, and, if so, what will be the social, cultural, and economic challenges arising from these developments? What are the technical challenges to making this all happen—for example, in terms of technologies such as big data, cloud, fog, and edge computing, mobile computing, and pervasive computing? What will be the role of the “user” as the 21st century moves along?

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by Professor Paolo Montuschi from Politecnico di Torino, led by yours truly. Participants were Nancy Ostin, director of IEEE-HKN, and professors Vin Piuri, University of Milan, Jean-Luc Gaudiot, president of the IEEE CS, and Claudio Demartini, head of Politecnico di Torino’s Department of Control and Computer Engineering and general cochair of the conference. Because of the popularity of these sessions, both will be included in next year’s Tokyo conference, with the HKN session directed toward organizing a new HKN Japan chapter.

C1J2 Program

This year, COMPSAC extended its efforts to assist presenters in

COMPSAC Next Year

Next year, the conference theme is “Staying Smarter in a Smartening World.” This theme is an extension and continuation of the effects of autonomous technologies that are producing profound changes in society. Emerging developments in areas such as deep learning, supported by increasingly powerful and increasingly miniaturized hardware, are beginning to be deployed in architectures, systems, and applications that are redefining the relationships between humans and technology. As this happens, humans are relinquishing their roles as masters of technology to partnerships wherein autonomous, computer-driven devices become our assistants.

I hope you will be interested in participating in COMPSAC next year in Tokyo, 23–27 July, either as a presenter or an audience member. There is no doubt you will find your participation in the trip both enjoyable and worthwhile. For further details and submission deadlines, visit the conference website at www.compsac.org. ■

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