



### Technological & Architectural Frameworks for Societal Automation

#### Honorary Chair

Tadeusz Słomka  
Rector  
AGH University of Science  
& Technology, Poland

#### General Chairs

Tomasz Szmuc  
AGH University of Science  
& Technology, Poland  
Richard Zurawski  
ISA Group, USA

#### Program Chairs

Andrzej Jajszczyk  
AGH University of Science  
& Technology, Poland  
Levente Kovács  
Óbuda University, Hungary

#### Special Sessions & Workshops Chairs

Khadija Chaib Draa  
TechnOptiz, Luxembourg  
Marek Miskowicz  
AGH University of Science & Tech., Poland

#### Track Chairs

V. E. Balas, University of Arad, Romania  
M. Baunach, TU Graz, Austria  
J. Gebhardt, ABB Corporate Research,  
Germany  
M. Jaatun, SINTEF, Norway  
K. Jobczyk, AGH UST, Poland  
A. Kalogeris, ISI, Greece  
A. Kostrzewa, TU Braunschweig, Germany  
S. Peterson, SINTEF, Norway  
T. Strasser, AIT GmbH, Austria  
K. Zielinski, AGH UST, Poland

#### Advisory Committee

E. Chang, ADFA, UNSW, Australia  
C. Hadjicostis, University of Cyprus, Cyprus  
E. Dekneuveel, University of Nice Sophia  
Antipolis, France  
P. Jedrzejewicz, Gdynia Maritime  
University, Poland  
G. Juanole, LAAS-CNRS and University  
Paul Sabatier of Toulouse, France (retired)  
K. Kozłowski, Poznan University of  
Technology, Poland  
S. Kwong, City University of Hong Kong,  
Hong Kong  
J. Magott, Wrocław Univ. of Tech., Poland  
V. Mařík, Czech Technical University in  
Prague, Czech Republic  
M. Paprzycki, Polish Academy of Sciences,  
Poland  
M. Zhou, NJIT, USA

#### Series Steering Committee

John S. Baras, University of Maryland at  
College Park, USA  
Fumio Harashima, University of Tokyo and  
Tokyo Metropolitan University, Japan  
Imre Rudas, Óbuda University, Hungary  
Tomasz Szmuc, AGH UST Poland  
Jacek Zurada, Univ. of Louisville, USA  
Richard Zurawski, ISA Group, USA

#### Sponsors:

- AGH University of Science and  
Technology, Poland  
- IEEE Systems, Man, and Cybernetics  
Society  
Polish Academy of Sciences –  
Committee on Informatics, Poland  
- IEEE Computational Intelligence  
Society Chapter - Poland Section  
- IEEE Computer Society Chapter  
Poland Section  
- IEEE Robotics and Automation  
Society Chapter - Poland Section  
- IEEE Systems, Man, and Cybernetics  
Society Chapter - Poland Section  
- Innovation 4.0 Institute, Poland

**Background:** The 4th Industrial Revolution and emerging Societal Automation initiatives deeply rooted in advances in Electronics, Communication, and Computer Science have been heralded by numerous visionary initiatives sponsored and advanced by industry, private consortia, and governments alike, all over the industrialized world – to mention smart factories, smart grid, smart homes, smart buildings, smart highways, smart transportation systems, urban automation, .... The household names of the Internet of Things and Cyber-Physical Systems provide conceptual and architectural frameworks as well as a technical infrastructure, though limited, for those initiatives.

The functional and technical scope of those initiatives is broad. Various application domains intersect at the crossroads of the initiatives. Vision is necessary to carve the image of the initiatives, but insufficient for their realization. At the root of the success in implementing and deploying visions is technology. Technology is a tangible "realization" of solutions, which arise from innovative thinking. Specific technological solutions and arising engineering infrastructure to be blended around the adopted architectural framework need sophisticated software tools underpinned by solid formal methodologies to assist in and guide through the design, validation, testing, deployment, and monitoring phases of the system life-cycle.

Technology and arising solutions are fast penetrating practically all areas and facets of our life; from pocket and wearable automation, to robotic companions, to home and building automation, to energy and transportation systems, to city/urban automation. In future: space colonies. **Societal Automation**, as this rapidly expanding human-centered technology penetration of our life can be called, has many aims: to make human-made engineering systems intuitive and safe in use; to strive to improve quality of our life; to provide comfortable and safe living habitat without degrading the surrounding natural environment; to mention some – in addition to fulfilling other geo-engineering requirements and societal needs.

**Aim:** The first in the series conference on Societal Automation will attempt to look in a holistic way at the Societal Automation domain in order to try to determine what solutions, technologies, architectural frameworks, and design tools are going to be needed in the design, development and deployment of future human-centered life-quality improving solutions and systems as well as (ultra) complex engineering systems to provide us with a living habitat and supporting infrastructure. The most crucial, however, are the expectations of us, individuals without major say in the Societal Automation evolution to ensure the developments serve our interest and do not threaten our privacy, body and psychological integrity, and safety in general.

Topics within the scope of the conference include the following thematic technical Tracks:  
(for details, see the conference web site: [sac2019.org](http://sac2019.org))

- Electronic Systems in Societal Automation
- Communication in Societal Automation
- Computing in Societal Automation
- AI, Machine & Deep Learning in Societal Automation
- Sensors in Societal Automation
- Human Companion
- Merging Humans and Machines
- Architectural Frameworks for Societal Automation
- Development of Ultra Complex Man-Made Engineering Systems
- Socio-Technical Aspects of Societal Automation
- Application Areas of Societal Automation

**Conference Format:** The conference will comprise multi-track sessions for regular papers, to present significant and novel research results with a prospect for a tangible impact on the research area and potential implementations; work-in-progress (WIP) sessions; panel discussions on the state-of-the-art and emerging trends, involving leading experts from industry and academia; and public discussion sessions moderated by leading experts in the field of societal automation systems.

**Submission of Papers:** The working language of the conference is English. Two types of submissions are solicited. Long Papers – limited to 8 double column pages in a font no smaller than 10-points. Work-in-Progress and Industry practice – limited to 4 double column pages in a font no smaller than 10-points. Manuscripts must be submitted electronically in PDF format, according to the instructions contained in the Conference web site.

Authors of accepted papers must ensure that their papers will be presented at the conference. At least one main (non-student) conference registration is mandatory for each accepted paper. **Further Information:** SA'2019 Conference Secretariat: Email: [contact@sac2019.org](mailto:contact@sac2019.org)

**Paper Acceptance:** Each accepted paper must be presented at the conference by one of the authors. The final manuscript must be accompanied by a registration form and a registration fee payment proof. All conference attendees, including authors and session chairpersons, must pay the conference registration fee, and their travel expenses. All submissions will be peer reviewed and rated by merits, and all the accepted papers will be published in the SA'2019 conference Proceedings. Conference content will be submitted for inclusion into IEEE Xplore, Scopus as well as other Abstracting and Indexing (A&I) databases.

#### Author's Schedule:

Regular and special sessions papers		Work-in-progress/ Industry practice papers	
Submission deadline	May 12, 2019	Submission deadline:	May 26, 2019
Acceptance notification	June 3, 2019	Acceptance notification:	June 16, 2019
Deadline for final manuscripts	June 30, 2019	Deadline for final manuscripts:	July 30, 2019

