ORGANIZATION

General Chairs
- **Samuel Kounev**, University of Würzburg, Germany

Program Committee Co-Chairs
- **Holger Giese**, Hasso Plattner Institute, Germany
- **Jie Liu**, Microsoft Research, Redmond, USA

Workshop Chair
- **Lydia Chen**, IBM Zurich, Switzerland

Publicity Co-Chairs
- **Giacomo Cabri**, Universita di Modena e Reggio Emilia, Italy
- **Javier Camara**, Carnegie Mellon University, Pittsburgh, USA
- **Nikolas Herbst**, University of Würzburg, Germany
- **Jianguo Yao**, **S**hanghai Jiao Tong University, China

Finance Chair
- **Philippe Lalanda**, University of Grenoble, France

Proceedings Chair
- **Daniel Gmach**, HP Labs, USA

Poster and Demo Chair
- **Stephanie Chollet**, Grenoble INP Esisar/LCIS, France

Local Arrangements and Web Chair
- **Lukas Iffländer**, University of Würzburg, Germany

Doctoral Symposium Co-Chairs
- **Christian Becker**, University of Mannheim, Germany
- **Evgenia Smirni**, College of William and Mary, USA

ICAC 2016 Call for Papers

http://icac2016.uni-wuerzburg.de

13th IEEE International Conference on Autonomic Computing (ICAC 2016)
Würzburg, Germany, July 19-22, 2016

Scope and Topics

ICAC is the leading conference on autonomic computing, its foundations, principles, engineering, technologies, and applications. Nowadays, complex systems of all types, like large-scale data centers, cloud computing infrastructures, cyber-physical systems, the internet of things, self-organizing systems, organic computing systems, cognitive computing systems, or self-aware computing systems, are increasingly complex, involving many active, interconnected components requiring careful coordination. Being impossible for a human to manage such systems, the autonomic computing paradigm with its support for self-management capabilities becomes increasingly indispensable for the components of our IT world.

IMPORTANT DATES

Submission Deadline:	Jan 21, 2016
Author Notification:	Apr 15, 2016
Final Manuscript:	May 1, 2016

The conference seeks latest research advances on science and engineering concerning all aspects of autonomic computing, including but not limited to the following main research topics:

Foundations
- Fundamental science and theory of autonomic computing systems and feedback control for software, self-awareness and self-expression
- Algorithms, such as AI, machine learning, control theory, operations research, probability and stochastic processes, queueing theory, rule-based systems, biological-inspired techniques, and socially-inspired techniques
- Formal models and analysis of self-management, emergent behavior, uncertainty, self-organization, self-awareness, trustworthiness

Resource Management in Data Centers
- Hypervisors, operating systems, middleware, and platforms for self-managing data centers and cloud infrastructures
- Sensing, energy efficiency, and resource adaptation
- Autonomic components, such as multi-core servers, storage, networking, and hardware accelerators
- Applications and case studies of end-to-end design and implementation of systems for resource management

Cyber-Physical Systems (CPS) and Internet of Things (IoT)
- System architectures OS, services, middleware, and protocols for CPS and IoT
- Energy, real-time, and mobility management
- Design principles, methodologies, and tools for CPS and IoT
- Self-organization under severe resource constraints
- Applications and case studies of autonomic CPS and IoT

Self-Organization and Organic Computing
- Self-organization principles and organic computing principles
- borrowed from systems theory, control theory, game theory, decision theory, social theories, biological theories, etc.
- Self-organization, emergent behavior, decentralized control, individual and social/organizational learning, scalability, robustness, goal- and norm-governed behavior, online self-integration for trustworthy self-organizing and organic systems
- Infrastructures and architectures for self-organizing systems and organic computing systems
- Applications and case studies for self-organization and organic computing

Emerging Computing Paradigms: Cognitive Computing, Self-Aware Computing
- Advanced learning for cognitive computing such as meta-cognitive learning, self-regulatory learning, consciousness and cognition in learning, collaborative / competitive learning, and online / sequential learning
- Architectures, control, algorithmic approaches, instrumentation, and infrastructure for cognitive computing and self-aware systems
- Cognitive computing and self-awareness in heterogeneous and decentralized systems
- Applications and case studies for social networks, big data systems, deep learning systems, games, and artificial assistants, cognitive robots, and systems with self-awareness and self-expression

Software Engineering for Autonomic Computing Systems: Architecture, Specifications, Assurances
- Design methodology, frameworks, principles, infrastructures, and tools for development and assurances for autonomic computing systems
- System architectures, services, components and platforms broadly applicable for autonomic computing system engineering
- Goal specification and policies, modeling of service-level agreements, behavior enforcement, IT governance, and business-driven IT management
- Applications and case studies for software engineering approaches for autonomic computing systems

In addition to fundamental results ICAC is also interested in applications and experiences with prototyped or deployed systems solving real-world problems in science, engineering, business, or society. Typical application areas for ICAC are autonomous robotics, cloud computing, cyber-physical systems, data centers, dependable computing, industrial internet / industry 4.0, internet of things, mobile computing, service-oriented systems, smart buildings, smart city, smart grid / energy management, smart factory, smart user interfaces, space applications, and traffic management.

Paper Submission

All papers must represent original and unpublished work that is not currently under review. Submissions are required to mark at least one topic area. Papers will be reviewed by at least three PC members including at least two having specific domain expertise concerning the indicated main research topics and judged on originality, significance, interest, correctness, clarity, and relevance to the broader community. At least one author of each accepted paper is expected to attend the conference.

Papers can be submitted in one of the following three categories with different acceptance criteria for each category:
- Full research papers limited to 10 pages (double column, IEEE format)
- Experience papers limited to 8 pages (double column, IEEE format)
- Short papers limited to 6 pages (double column, IEEE format)

Full and experience research papers are strongly encouraged to report on experiences, measurements, user studies, and provide an appropriate quantitative evaluation if at all possible. Short papers can either be work in progress, or position and challenge papers that motivate the community to address new challenges. See conference website for format instructions.

There will be a **best paper award** for the full research paper category and it is planned that a selection of the best papers of the full research paper category will be invited to submit an extended version of their contribution for a ICAC 2016 **special issue** after the conference.

Organization: (pending approval)

IEEE usenix THE ADVANCED COMPUTING SYSTEMS ASSOCIATION spec Research