



Call for Papers

6th International Workshop on **Self-Optimisation in Autonomic and Organic Computing Systems (SAOS 2018)**

co-located with 31st GI/ITG ARCS 2018 in Braunschweig, Germany from April 09 to April 12, 2018

Initiatives such as Autonomic Computing (AC) and Organic Computing (OC), or the more general research field of self-adaptive and self-organising systems (SASO), are based on the insight that we are increasingly surrounded by large collections of autonomous systems, which are equipped with sensors and actuators, aware of their environment, communicating freely, and organising themselves in order to perform the required actions and services in an adequate and robust manner. The resulting presence of networks of intelligent systems in our daily environment opens fascinating application areas but, at the same time, bears the problem of their controllability.

Hence, different design concepts (such as the MAPE cycle and the Observer/Controller framework) have been developed to allow for a self-organised control process at runtime that relieves the designer from specifying all possibly occurring situations and configurations within the design process. Instead, the system itself takes over responsibility to find proper reactions to perceived changes in the environmental conditions. As designers are not able to foresee all possibly occurring situations and circumstances the system will face during its operation time, the self-organisation process of the system has to pursue a steadily self-optimising behaviour. Self-optimising behaviour can be triggered at various levels of the system's design, ranging from basic control architectures over self-organised coordination/collaboration methods as well as from domain-specific optimisation techniques to the application of machine learning algorithms. Furthermore, related topics such as trust and security in collaborative systems provide necessary concepts to enable self-optimising behaviour in SASO systems. In this workshop, we will discuss current research efforts that endeavour the establishment of self-optimising system behaviour. Thereby, a special focus will be set on observable trends and upcoming challenges, resulting from well-known issues of adjacent domains such as evolutionary optimisation or machine learning.

Contributions are expected to focus on at least one of the following categories:

- A. Architectural concepts for enabling self-optimising system behaviour
- B. Applied machine learning and optimisation algorithms to achieve self-optimisation
- C. Novel application scenarios for self-optimising systems
- D. Current trends/challenges in the field of self-optimising interconnected systems

Important Dates

- Submission deadline (**extended**): **January 12, 2018**
- Decision notification: **January 26, 2018**
- Camera-ready version: **February 2, 2018**

Submissions

- Papers should be written in English
- Papers' format should conform to the IEEE CIS template in "conference mode"
- Papers should not exceed **8 pages (full paper)** or **4 pages (short paper)**
- PDF submission via EasyChair: <https://easychair.org/conferences/?conf=saos2018>

Workshop Organisation

- Anthony Stein, University of Augsburg (DE)
- Sven Tomforde, University of Kassel (DE)
- Jean Botev, University of Luxembourg (LU)
- Jörg Hähner, University of Augsburg (DE)

SAOS 2018 website

