Trustworthy Self-Organizing Systems

Workshop at the Fourth IEEE International Conference on Self-Adaptive and Self-Organizing Systems 2010
TSOS 2010, Budapest, September 27 – October 1, 2010

Call for Papers

The issues of trust and reputation in multi-agent systems have received a lot of attention in the past. Also, formal methods to guarantee functional correctness, safety, and security as well as techniques to ensure reliability in distributed, self-organizing systems have been investigated by diverse research groups from different communities. Furthermore, the matter of the human as the user of self-organising and self-adaptive systems and the usability of such systems has been subject of research. These different facets of the same problem have so far been considered only separately and many have regarded security, safety, etc. as complementary to trust.

However, the overall trustworthiness of a self-organising system is connected to all the aforementioned properties and should be regarded holistically. The facets of trust qualify the relationships between the components of the system and between the user and the system. Functional correctness, security, safety, and reliability are facets that have to be ensured for the system's components as well as for the system as a whole. The classical notions of trust and reputation in MAS also apply to this relationship between system components. The relationship between the system and the user is influenced by the transparency and consistency of the system towards the user and most importantly by its usability, i.e., the way the user is informed about self-organising processes and allowed to interact with the system.

The nature of self-organising systems demands that issues of trust and its different facets become a primary concern. Many interacting adaptive entities, emergent behaviour, and a highly dynamic environment prompt the designer of such a system to consider trust in every aspect of the engineering process. Not only will a thorough consideration of trust yield a more robust and more secure system, but the incorporation of trust can also lead to gains with regard to performance and ease of use. In domains in which systems have to be certified, the formal treatment of trust and its facets in self-organising systems is a necessity.

The workshop will provide an open stage for discussions about the different facets of trust in self-organising systems, how every single one of them can be fostered, and how they relate. The workshop organizers are thus looking for submissions on any of the trust aspects mentioned above. Further examples for topics of interest are:

- Metrics of trust and specialised metrics for single trust facets
- Policies and their influence on trustworthiness
- Trust management systems for self-organising systems
- Formal methods to analyse, prove, or measure aspects of trust
- Trust and reputation in multi-agent systems
- Adaptive user interfaces
- Visualization of self-organisation processes
- Measuring and evaluating user trust in self-organising systems
- Engineering of trustworthy self-organising systems
- Evaluations of the effects of trust in self-organising systems

Publication

The workshop organizers solicit both original research papers as well as position papers with a maximum length of 6 pages. Each paper will be reviewed in a double-blind process. The decision will be based on the motivation of the research, the clarity of the claims of the contribution, the relevance of the research to the domain of self-organizing systems, its evaluation, and the thoroughness of the related work comparison. Submitted papers must not have been previously published or submitted elsewhere.

The proceedings of the workshop will be published by IEEE Computer Society Press as a bundle with the main conference proceedings, and made available as a part of the IEEE digital library.

Important Dates

Paper submission:	**July 12, 2010**
Acceptance Notification:	August 6, 2010
Camera-ready version:	August 20, 2010
Early registration:	August 13, 2010
Workshop:	**September 28, 2010**

Website

More information can be found at http://tsos.isse.de.

Workshop Organization

Wolfgang Reif
Augsburg University, Germany
Institute for Software & Systems Engineering
Universitätsstr. 6a
D-86159 Augsburg
reif@informatik.uni-augsburg.de
Phone: +49 (0) 821 598-2174

Christian Müller-Schloer
Leibniz University Hannover, Germany
Institute for Systems Engineering
Appelstr. 4
D-30167 Hannover
cms@sra.uni-hannover.de
Phone: +49 (0) 511-762-19731

For all enquiries about the workshop, please contact:
Jan-Philipp Steghöfer
Augsburg University
Institute for Software & Systems Engineering
Universitätsstr. 6a
D-86159 Augsburg
steghoefer@informatik.uni-augsburg.de
+49 (0) 821 598-2177

Program Committee

Elisabeth André, Augsburg University
Radu Calinescu, Oxford University
Rino Falcone, Institute of Cognitive Sciences and Technologies
Jörg Hähner, Leibniz University Hannover
Tom Holvoet, Katholike Universiteit Leuven
Martin Purvis, Otago University
Hartmut Schmeck, Karlsruhe Institute of Technology
Onn Shehory, IBM Research Labs Haifa
Graeme Smith, Queensland University Brisbane
Theo Ungerer, Augsburg University
Julita Vassileva, University of Sasketchewan

Paper Format

Maximum of 6 pages, formatted according to the IEEE Computer Society Press proceedings style guide.