

Special issue on autonomic and self-organising systems

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Context

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The complexities of modern computing and communications systems are well-known, as are the impact that these complexities have on their construction, composition, management, maintenance and evolution. It is now well-accepted that the total costs of ownership can have a significant effect on the economics of many service offerings, and that unmanageable complexity can threaten life and economic health in the event of failures.

Autonomic computing and communications apply notions of feedback control, self-organisation, monitoring and reasoning to the construction and management of large systems. Originally suggested by IBM as a way to control total costs of ownership, the fields have expanded to address the design and implementation of stable, "self-*" algorithms as well as the overall design and analysis of adaptive properties and behaviour. Such self-* systems offer to improve the dynamic responses of systems to changing conditions, simplifying their construction, management and deployment.

Although often considered separately, the interdependence of computing and communications in the modern world implies that we apply autonomic techniques on a whole-system basis that encompasses both aspects of systems design. In this special issue we have two aims: to provide a guide to a unified field of autonomic computing and communications through invited contributions addressing cross-system and whole-system techniques; and to present novel research contributions that advance the state of autonomic and self-organising systems design. With this in mind, we invite research contributions including (but most definitely not limited to) the following topics:

- techniques for self-organisation at a system level
- foundational science of autonomies and self-organisation
- application of novel techniques to large-scale problems
- self-stabilising and self-optimising algorithms
- evaluations and evaluation methodologies for self-organising systems
- managing trade-offs between system aspects

Contributions addressing issues that cross between the autonomic computing and communication fields are particularly welcome.

Important dates

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Deadline for Submission: 14 December 2007

Notification of Acceptance: 4 February 2008

Camera-ready copy due: 24 March 2008

Tentative Publication Date: August 2008

Submission:

Prospective authors are to prepare their papers according to the instructions laid out in the Instructions to Authors at <http://www.elsevier.com/locate/comnet>, and submit to <http://www.editorialmanager.com/comnet>, choosing the Article Type: Autonomic and Self-organising Systems

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