

Bin Xiao Laurence T. Yang
Jianhua Ma Christian Muller-Schloer
Yu Hua (Eds.)

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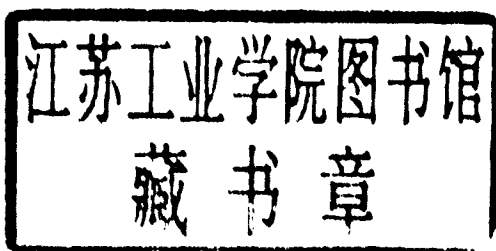


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Preface

This volume contains the proceedings of ATC 2007, the 4th International Conference on Autonomic and Trusted Computing: Bringing Safe, Self-x and Organic Computing Systems into Reality. The conference was held in Hong Kong, during July 11-13, 2007. ATC 2007 is a successor of the 1st International Workshop on Trusted and Autonomic Ubiquitous and Embedded Systems (TAUES 2005, Japan, December 2005), the International Workshop on Trusted and Autonomic Computing Systems (TACS 2006, Austria, April 2006), and the 3rd International Conference on Autonomic and Trusted Computing (ATC 2006, Three Gorges, China, September 2006).

Computing systems including hardware, software, communication and networks are growing towards an ever-increasing scale and heterogeneity, becoming overly complex. Such complexity is getting even more critical with the ubiquitous permeation of embedded devices and other pervasive systems. To cope with the growing and ubiquitous complexity, autonomic computing (AC) focuses on self-manageable computing and communication systems that exhibit self-awareness, self-configuration, self-optimization, self-healing, self-protection and other self-x operations to the maximum extent even without human intervention or guidance. Organic computing (OC) additionally emphasizes natural-analogue concepts like self-organization and controlled emergence.

Any autonomic or organic system must be trustworthy to avoid the risk of losing control and to retain confidence that the system will not fail. Trust and/or distrust relationships on the Internet and in pervasive infrastructures are key factors to enable dynamic interaction and cooperation of various users, systems and services. Trusted/trustworthy computing (TC) aims at making computing and communication systems as well as services available, predictable, traceable, controllable, assessable, sustainable, dependable, persist-able, security/privacy protect-able, etc. A series of grand challenges exist to achieve practical self-manageable autonomic systems with truly trustworthy services. ATC 2007 addressed the most innovative research and development in these challenging areas and included all technical aspects related to autonomic/organic computing (AC/OC) and trusted computing (TC).

The ATC 2007 conference provided a forum for engineers and scientists in academia, industry and government to exchange ideas and experiences in developing AC/TC theory and models, architectures and systems, components and modules, communication and services, tools and interfaces, services and applications. There was a large number of paper submissions (223), representing 25 countries and regions, not only from Asia and the Pacific, but also from Europe, and North and South America. All submissions were reviewed by at least three Program Committee members or external reviewers. It was extremely difficult to select the presentations for the conference because there were so many

excellent and interesting submissions. In order to allocate as many papers as possible and keep the high quality of the conference, we finally decided to accept 55 papers for presentations, which reflected a 24.6% acceptance rate. We believe that all of these papers and topics not only provided novel ideas, new results, work in progress and state-of-the-art techniques in this field, but also stimulated the future research activities in the area of autonomic and trusted computing. In addition to the refereed papers the proceedings include Hartmut Schmeck's keynote addressing "Remarks on Self-Organization and Trust in Organic Computing Systems".

Organization of conferences with a large number of submissions requires a lot of hard work and dedication from many people. We would like to take this opportunity to thank numerous people whose work made this conference possible and ensured its high quality. We wish to thank the authors of submitted papers, as they contributed to the conference technical program. We wish to express our deepest gratitude to the Program (Vice) Chairs, Mazin Yousif, Omer F. Rana, Xiaobo Zhou, Wolfgang Reif, Dimitris Nikolopoulos and Silvia Giordano for their hard work and commitment to quality when helping with paper selection. We would also like to thank all Program Committee members and external reviewers for their excellent job in the paper review process, the Advisory Committee for their continuous advice, and Stephen S. Yau for organizing a panel on "Future Trends of Autonomic and Ubiquitous Computing." We are also indebted to the Publicity Chairs for advertising the conference, to Lin Chen and other people from the Local Organizing Committee for managing registration and other conference organization-related tasks, and to the Department of Computing, Hong Kong Polytechnic University for hosting the conference. We are also grateful to Tony Li Xu and Liu Yang for their hard work in managing the conference Web site and the conference management system.

July 2007

Bin Xiao
Laurence T. Yang
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