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Autonomic and Trusted Computing

5th International Conference, ATC 2008
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Proceedings

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Preface

This volume contains the proceedings of ATC 2008, the 5th International Conference on Autonomic and Trusted Computing: Bringing Safe, Self-x and Organic Computing Systems into Reality. The conference was held in Oslo, Norway, during June 23–25, 2008.

ATC 2008 is a successor of the First IFIP Workshop on Trusted and Autonomic Ubiquitous and Embedded Systems (TAUES 2005, Japan), the International Workshop on Trusted and Autonomic Computing Systems (TACS 2006, Austria), the Third International Conference on Autonomic and Trusted Computing (ATC 2006, China), and the 4th International Conference on Autonomic and Trusted Computing (ATC 2007, Hong Kong).

Computing systems including hardware, software, communication and networks are growing dramatically in both 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 possible 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 in the Internet and in pervasive infrastructures are key factors in enabling 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, persistable, security/privacy protectable, etc.

A series of grand challenges remain before practical self-manageable autonomic systems with truly trustworthy services become a reality. ATC 2008 addressed the most innovative research and development in these challenging areas, and covered a multitude of technical aspects related to autonomic/organic computing (AC/OC) and trusted computing (TC).

The ATC 2008 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 were 75 papers submitted, representing 22 countries and regions, from Asia, Europe, North America and the Pacific. All submissions were reviewed by at least three Technical Program Committee members or external reviewers.

In order to allocate as many papers as possible and keep the high quality of the conference, we finally decided to accept 25 regular papers for presentation, which reflected a 33% acceptance rate. In addition, there were 26 special session papers included in the proceedings. 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.

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 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 Steering Committee and Advisory Committee for their continuous advice, and Erik Hjelmås for organizing a panel on the important question: "Do we need a secure element in hardware?" A special thanks to Yo-Ping Huang and Tsun-Wei Chang for organizing a special session on "Sensor Networks, VoIP, and Watermarking." We are also in debt to the Publicity Chairs for advertising the conference, to the Local Organizing Committee for managing registration and other conference organization-related tasks, and to Oslo University College for hosting the conference. We are also grateful to Son T. Nguyen for the hard work on managing the conference website and the conference management system.

Chunming Rong
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