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Distributed Applications and Interoperable Systems

10th IFIP WG 6.1 International Conference, DAIS 2010
Amsterdam, The Netherlands, June 7-9, 2010
Proceedings

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Foreword

In 2010 the International Federated Conference on Distributed Computing Techniques (DisCoTec) took place in Amsterdam, during June 7-9. It was hosted and organized by the Centrum voor Wiskunde & Informatica.

DisCoTec conferences jointly cover the complete spectrum of distributed computing subjects ranging from theoretical foundations to formal specification techniques to practical considerations. The 12th International Conference on Coordination Models and Languages (Coordination) focused on the design and implementation of models that allow compositional construction of large-scale concurrent and distributed systems, including both practical and foundational models, run-time systems, and related verification and analysis techniques. The 10th IFIP International Conference on Distributed Applications and Interoperable Systems in particular elicited contributions on architectures, models, technologies and platforms for large-scale and complex distributed applications and services that are related to the latest trends towards bridging the physical/virtual worlds based on flexible and versatile service architectures and platforms. The 12th Formal Methods for Open Object-Based Distributed Systems and 30th Formal Techniques for Networked and Distributed Systems together emphasized distributed computing models and formal specification, testing and verification methods.

Each of the three days of the federated event began with a plenary speaker nominated by one of the conferences. On the first day Joe Armstrong (Ericsson Telecom AB) gave a keynote speech on Erlang-style concurrency, and on the second day Gerard Holzmann (Jet Propulsion Laboratory, USA) discussed the question “Formal Software Verification: How Close Are We?”. On the third and last day Joost Roelands (Director of Development Netlog) presented the problem area of distributed social data. In addition, there was a joint technical session consisting of one paper from each of the conferences and an industrial session with presentations by A. Stam (Almende B.V., Information Communication Technologies) and M. Verhoef (CHESS, Computer Hardware & System Software) followed by a panel discussion.

There were four satellite events: the Third DisCoTec Workshop on Context-aware Adaptation Mechanisms for Pervasive and Ubiquitous Services (CAMPUS), the First International Workshop on Interactions Between Computer Science and Biology (CS2BIO) with keynote lectures by Luca Cardelli (Microsoft Research - Cambridge, UK) and Jérôme Feret (INRIA and École Normale Supérieure - Paris, France), the First Workshop on Decentralized Coordination of Distributed Processes (DCDP) with a keynote lecture by Tyler Close (Google), and the Third Interaction and Concurrency Experience Workshop with keynote lectures by T. Henzinger (IST, Austria) and J.-P. Katoen (RWTH Aachen University, Germany).

I hope this rich program offered every participant interesting and stimulating events. It was only possible thanks to the dedicated work of the Publicity Chair Gianluigi Zavattaro (University of Bologna, Italy), the Workshop Chair Marcello Bonsangue (University of Leiden, The Netherlands) and the members of the Organizing Committee, Susanne van Dam, Immo Grabe, Stephanie Kemper and Alexandra Silva. To conclude I want to thank the sponsorship of the International Federation for Information processing (IFIP), the Centrum voor Wiskunde & Informatica and the Netherlands Organization for Scientific Research (NWO).

June 2010

Frank S. de Boer

Preface

This volume contains the proceedings of DAIS 2010, the IFIP International Working Conference on Distributed Applications and Interoperable Systems. The conference was held in Amsterdam, The Netherlands, during June 7-9, 2010 as part of DisCoTec (Distributed Computing Techniques) Federated Conference, together with the International Conference on Formal Techniques for Distributed Systems (FMOODS & FORTE) and the International Conference on Coordination Models and Languages (COORDINATION). The DAIS 2010 conference was sponsored by IFIP (International Federation for Information Processing) in-cooperation with ACM SIGSOFT and ACM SIGAPP, and it was the tenth conference in the DAIS series of events organized by IFIP Working Group 6.1.

The conference program presented the state of the art in research on distributed and interoperable systems.

Distributed application technology has become a foundation of the information society. New computing and communication technologies have brought up a multitude of challenging application areas, including mobile computing, inter-enterprise collaborations, ubiquitous services, service-oriented architectures, autonomous and self-adapting systems, peer-to-peer systems, just to name a few. New challenges include the need for novel abstractions supporting the development, deployment, management, and interoperability of evolutionary and complex applications and services, such as those bridging the physical/virtual worlds. Therefore, the linkage between applications, platforms and users through multidisciplinary user requirements (like security, privacy, usability, efficiency, safety, semantic and pragmatic interoperability of data and services, dependability, trust and self-adaptivity) becomes of special interest. It is envisaged that future complex applications will far exceed those of today in terms of these requirements.

The main part of the conference program comprised presentations of the accepted papers. This year, the technical program of DAIS drew from 53 submitted papers. All papers were reviewed by at least three reviewers. After initial reviews were posted, a set of candidate papers were selected and subject to discussion among the reviewers and Program Committee Chairs to resolve differing viewpoints. As a result of this process, 17 full papers were selected for inclusion in the proceedings. The papers presented at DAIS 2010 address integration and QoS provisioning of ubiquitous services and applications, grid computing including reconfiguration languages and volunteer computing, sensor network distributed programming and middleware, context-awareness, composition and discovery of ubiquitous services, fault-tolerance and fault-tolerant controllers, cloud and cluster computing, and adaptive and (re)configurable systems.

Finally, we would like to take this opportunity to thank the numerous people whose work made this conference possible. We wish to express our deepest

gratitude to the authors of submitted papers, to all Program Committee members for their active participation in the paper review process, to all external reviewers for their help in evaluating submissions, to the Centrum Wiskunde & Informatics (CWI) for hosting the event, to the Publicity Chairs, to Romain Rouvoy who took care of the practical work with the proceedings, to the DAIS Steering Committee for their advice, and to Frank S. de Boer for acting as General Chair of the joint event.

June 2010

Frank Eliassen
Rüdiger Kapitza

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