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Formal Techniques for Distributed Systems

Joint 11th IFIP WG 6.1 International Conference FMOODS 2009
and 29th IFIP WG 6.1 International Conference FORTE 2009
Lisboa, Portugal, June 9-12, 2009
Proceedings

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Foreword

This year's edition of the international federated conferences on Distributed Computing Techniques took place in Lisbon during June 9–11. It was hosted by the Faculty of Sciences of the University of Lisbon and formally organized by the Institute of Telecommunications, the research center I am associated with.

The DisCoTec conferences jointly cover the complete spectrum of distributed computing subjects ranging from theoretical foundations to formal specification techniques to practical considerations. The event this year comprised the 11th International Conference on Coordination Models and Languages (COORDINATION), the 9th IFIP International Conference on Distributed Applications and Interoperable Systems (DAIS), and the IFIP International Conference on Formal Techniques for Distributed Systems (FMOODS/FORTE). COORDINATION focused on languages, models, and architectures for concurrent and distributed software; DAIS on methods, techniques, and system infrastructures needed to design, build, operate, evaluate, and manage modern distributed applications in any kind of application environment and scenario; and FMOODS (the 11th Formal Methods for Open Object-Based Distributed Systems) joined forces with FORTE (the 29th Formal Techniques for Networked and Distributed Systems) creating a forum for fundamental research on theory and applications of distributed systems.

In an effort for integration, each of the three days of the event started with an invited talk suggested by one of the conferences, in a plenary session, and, furthermore, one of the technical sessions was composed of a paper from each conference. The common program also included the first tutorial series on Global Computing, a joint initiative of the EU projects Mobius (Mobility, Ubiquity and Security) and Sensoria (Software Engineering for Service-Oriented Overlay Computers), which contributed to a very interesting program. I would like to thank all the invited speakers for accepting to give talks at the event, and all the authors for submitting papers.

As satellite events, there were two workshops, the Second Workshop on Context-aware Adaptation Mechanisms for Pervasive and Ubiquitous Services (CAMPUS 2009), focusing on approaches in the domain of context-aware adaptation mechanisms supporting the dynamic evolution of the execution context, and the Third Workshop on Middleware-Application Interaction (MAI 2009), focusing on middleware support for multiple cross-cutting features such as security, fault tolerance, and distributed resource management. The 10th International Conference on Feature Interactions in Telecommunications and Software Systems (ICFI) and meetings of the EU COST action on Formal Verification of Object-Oriented Software and the Sensoria project were co-located with DisCoTec.

I hope this rich program offered every participant interesting and stimulating events. It was only possible thanks to the dedicated work of the members

of the Organizing Committee — Ana Matos, Carla Ferreira, Francisco Martins, João Seco and Maxime Gamboni — and to the sponsorship of the Center of Informatics and Information Technology (CITI), the Portuguese research foundation Fundação para a Ciência e a Tecnologia (FCT), the Instituto de Telecomunicações (IT), and the Large-Scale Informatics Systems Laboratory (LaSIGE).

April 2009

António Ravara

Preface

This volume contains the proceedings of the IFIP International Conference on Formal Techniques for Distributed Systems. The conference is organized as the joint activity of two conferences: FMOODS (Formal Methods for Open Object-Based Distributed Systems) and FORTE (Formal Techniques for Networked and Distributed Systems).

The goal of the conference on Formal Techniques for Distributed Systems – FMOODS/FORTE – is to provide a forum for fundamental research on theory and applications of distributed computing models and formal specification, testing and verification methods. The application domains for these techniques include a variety of application-level distributed systems, telecommunication services, Internet, embedded and real-time systems, as well as networking and communication security and reliability.

The proceedings contain 12 regular and 6 short papers. They were selected by the Program Committee (PC) among 42 submissions. Each paper was assigned to at least three PC members for a detailed review. Additional expert reviews were solicited if the reviews of a paper had quite diversified assessments or the reviewers indicated low confidence. The final decision of acceptance was based on an online discussion of the PC. The selected papers constitute a strong program of stimulating and timely topics in the areas of formal verification, algorithms and implementations, modeling and testing, process algebra and calculus, and analysis of distributed systems.

In addition to the selected contributions, the proceedings feature the article “The Orc Programming Language” by Jayadev Misra of the University of Texas at Austin, USA, who was the invited speaker of FMOODS/FORTE this year. He is an international expert in applying formal methods to distributed systems, in particular in the area of specifying and designing synchronous and asynchronous systems.

We are deeply indebted to the PC members and external reviewers for their hard and conscientious work in preparing 159 reviews. We thank António Ravara, the General Chair, for his support, and the Steering Committees of FMOODS and FORTE for their guidance. Our gratitude goes to the authors for their support of the conference by submitting their high-quality research works. We thank the providers of the conference tool EasyChair that was a great help in organizing the submission and reviewing process.

June 2009

David Lee
Antónia Lopes
Arnd Poetzsch-Heffter

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Table of Contents

Invited Contribution

The Orc Programming Language.....	1
<i>David Kitchen, Adrian Quark, William Cook, and Jayadev Misra</i>	

Regular Contributions

Keep It Small, Keep It Real: Efficient Run-Time Verification of Web Service Compositions.....	26
<i>Luciano Baresi, Domenico Bianculli, Sam Guinea, and Paola Spoletini</i>	
Approximated Context-Sensitive Analysis for Parameterized Verification	41
<i>Parosh Aziz Abdulla, Giorgio Delzanno, and Ahmed Rezzine</i>	
Verification of Parameterized Systems with Combinations of Abstract Domains	57
<i>Naghme Ghafari, Arie Gurfinkel, and Richard Treffler</i>	
On Model-Checking Optimistic Replication Algorithms	73
<i>Hanifa Boucheneb and Abdessamad Imine</i>	
Recursive Parametric Automata and ϵ -Removal	90
<i>Lin Liu and Jonathan Billington</i>	
A Software Platform for Timed Mobility and Timed Interaction.....	106
<i>Gabriel Ciobanu and Călin Juravle</i>	
Modeling, Validation, and Verification of PCEP Using the IF Language	122
<i>Iksoo Hwang, Mounir Lallali, Ana Cavalli, and Dominique Verchere</i>	
Distinguishing Non-deterministic Timed Finite State Machines	137
<i>Maxim Gromov, Khaled El-Fakih, Natalia Shabaldina, and Nina Yevtushenko</i>	
System Model-Based Definition of Modeling Language Semantics	152
<i>Hans Grönniger, Jan Oliver Ringert, and Bernhard Rumpe</i>	
Typing Component-Based Communication Systems	167
<i>Michael Lienhardt, Claudio Antares Mezzina, Alan Schmitt, and Jean-Bernard Stefani</i>	

Epistemic Logic for the Applied Pi Calculus	182
<i>Rohit Chadha, Stéphanie Delaune, and Steve Kremer</i>	
On Process-Algebraic Proof Methods for Fault Tolerant Distributed Systems	198
<i>Morten Kühnrich and Uwe Nestmann</i>	
Short Papers	
Using First-Order Logic to Reason about Submodule Construction	213
<i>Gregor v. Bochmann</i>	
A Model-Checking Approach for Service Component Architectures	219
<i>João Abreu, Franco Mazzanti, José Luiz Fiadeiro, and Stefania Gnesi</i>	
Dynamic Symbolic Execution of Distributed Concurrent Objects	225
<i>Andreas Griesmayer, Bernhard Aichernig, Einar Broch Johnsen, and Rudolf Schlatte</i>	
Checking the Conformance of Orchestrations with Respect to Choreographies in Web Services: A Formal Approach	231
<i>Gregorio Díaz and Ismael Rodríguez</i>	
A Type Graph Model for Java Programs	237
<i>Arend Rensink and Eduardo Zambon</i>	
Conformance Testing of Network Simulators Based on Metamorphic Testing Technique	243
<i>Tsong Yueh Chen, Fei-Ching Kuo, Huai Liu, and Shengqiong Wang</i>	
Author Index	249