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Modelling Autonomic Communication Environments

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Proceedings

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Preface

We are delighted to present the proceedings of the 5th International Workshop on Modeling Autonomic Communication Environments (MACE 2010). This workshop was held as part of the 6th International Conference on Network and Service Management (CNSM 2010), formerly known as and building on the success of the MANWEEK conference series. This year we met just a hundred yards away from Niagara Falls in Canada, a very exciting location.

MACE started as an experiment and over the past years has created a small yet very active community that convened again this year to discuss and evaluate new advances, innovative ideas, and solid developments. The main focus of MACE, combining modeling with communications, is certainly a hard topic that requires a lot of discussion, thus the work presented at the workshop is intrinsically debatable and might not be as practiced as in other well-established workshops, but this was the nature of MACE from the beginning. New ideas, sometimes more, sometimes less rough around the edges (and some of them even inside) are submitted and provoke extensive discussions. The field in which we are working relies on these discussions, or even adventures, and we have this year again strongly motivated and supported a variety of novel work in the technical program.

This year, the submissions, while being closely related to the main themes, brought some new areas into the workshop. We still see architectural design and the application of autonomic principles to networks and services, but we also now have submissions looking into previously unexplored areas such as Home Area Networks, multimedia streaming, virtualization, federation, and user experience. This portrays a maturity in the domain, which has by now gone through several cycles, and improves its outputs by applying the lessons learned. It seems that autonomic communications, while still being an interesting area for research, are now entering a phase of extensive exploitation. A good indicator for this is the fact that one third of the papers presented in these proceedings are based on academic-industrial collaborations rather than on purely academic research.

We are proud to present the proceedings as a volume of Springer's Lecture Notes in Computer Science (LNCS) again. This book presents the accepted papers of the technical session of MACE 2010. We had, overall, 17 submissions of which we accepted 10 as full papers. Each paper was assigned to at least four domain experts from the MACE Technical Program Committee. Furthermore, to ensure that each accepted paper provided for an interesting program and encouraged debate, we discussed all submissions and all the reviews in detail. We believe that, to support the objectives of MACE, this effort was worthwhile and we hope that this book provides you with cutting-edge ideas, thoughtfully presented solutions, as well as food for thought.

Each section of this book represents one of the technical sessions of MACE 2010. The first section, Autonomics in Home Area Networks and Multimedia, opens a new area that we have never seen before at the workshop. It includes three papers jointly written by industry (operators and equipment vendors) and academia, starting with an application of autonomic management in Home Area Networks followed by two contributions focusing on automated multimedia streaming and quality of experience for multimedia services. The second section, Ontologies, Experience, Adaptive Systems, and Federation, shows work from classic MACE areas. The four papers in this section look into ontologies and semantics for autonomic elements, address user experience, and look into architectures and governance of communication systems. The interesting twist is that, in contrast to past years, the work presented does not only address single systems but emphasizes the need to investigate federated autonomic systems. The third section, Modeling for Virtualized Infrastructure, shows the maturity of autonomic communications by demonstrating implementations of flexible network stacks, integrating context into virtual resource management, and finally applying autonomic principles for fault management in virtualized infrastructures.

We would like to thank the many people whose hard work and commitment were essential to the success of MACE 2010. Foremost are the authors who submitted their work this year. We would like to express our gratitude to the MACE Technical Program Committee and the Steering Committee for their hard work, advice, and support through all stages of the preparations for the workshop. We specifically thank all reviewers for their faith and helpful reviews. Most of the time-consuming logistical work was handled by the members of the CNSM 2010 Organization Committee, and we would like to thank the CNSM general chair, Raouf Boutaba, the Program Chairs, Hanan Lutfiyya and Yixin Diao, and last but not least, the Workshop Chair, Noura Limam, for their continuous support and help. Finally we wish to acknowledge the financial support of the CNSM sponsors, whose contributions were hugely instrumental in helping us run what we hope was a stimulating, rewarding and, most importantly, an enjoyable workshop for all its participants.

October 2010

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