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Computer Performance Evaluation

Modelling Techniques and Tools

11th International Conference, TOOLS 2000
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Preface

In the design, implementation, and operational planning of computer and communication systems, many questions regarding the desired capacity and speed of (sub)systems have to be answered. At this point, performance and dependability evaluation techniques can be of great help. With these techniques, design decisions can be prepared using advanced methods to construct appropriate models, to parameterise these models, and to solve them. The application of a broad spectrum of such methods and techniques is currently supported by tools (mostly software, but sometimes partly hardware as well). Such tools enable system designers and engineers to construct their models in a flexible and modular way using high-level application-oriented modelling languages, to solve their models with a variety of techniques and to exercise parametric studies at ease.

The goal of the ***11th International Conference on Modelling Tools and Techniques for Computer and Communication System Performance Evaluation*** ("TOOLS 2000") was to further develop the theory and technology for tool-based performance and dependability evaluation of computer and communication systems. Important themes included software tools, evaluation techniques, measurement-based tools and techniques, performance and dependability evaluation techniques based on formal methods, case studies showing the role of evaluation in the design of systems, and application studies in the area of centralised and distributed computer systems.

Previous conferences in this series were held over the past 15 years in Paris (1984), Sophia Antipolis (1985), Paris (1987), Palma de Mallorca (1988), Torino (1991), Edinburgh (1992), Wien (1994), Heidelberg (1995), Saint Malo (1997), and Palma de Mallorca (1998). The proceedings of the latter four conferences also appeared in the series Lecture Notes in Computer Science (Volumes 794, 977, 1245, and 1469, respectively).

TOOLS 2000 has been unique in a number of ways. First of all, it was the first conference in this series held outside of Europe. More precisely, TOOLS 2000 was hosted by Motorola at the Galvin Center in Schaumburg (Illinois, USA). Secondly, TOOLS 2000 was, for the first time, organised in conjunction with the IEEE International Performance and Dependability Symposium ("IPDS 2000"). This allowed for a number of joint components in the programmes: the two invited speakers, the tool demonstrations, a panel discussion, the tutorial programme, and the social events were all shared between TOOLS 2000 and IPDS 2000 participants. Moreover, participants to the event could attend sessions of either conference.

For TOOLS 2000, the programme committee enjoyed 49 regular submissions, which were all sent to four PC members for review. Around 95% of all requested reviews were returned in time for the internet-based programme committee meeting which was held in the first week of December 1999. At this point, it is worth mentioning that the electronic programme committee meeting functioned very

well and agreement was reached rapidly on most of the papers. The use of the WIMPE system (developed by David Nicol) to manage the paper submission and reviewing process turned out to be very convenient and is recommended for the future.

As a result of the programme committee meeting, 21 high-quality submissions were selected as regular papers. Thus, the programme featured sessions on queueing network models, stochastic Petri nets, simulation techniques, formal methods and performance evaluation, measurement techniques and applications, and optimisation techniques in mobile networks. Alongside these regular paper sessions, the conference included two sessions in which 15 tools (accepted by the tool demonstration chair) were briefly presented. Of most of these tools, a short description is included in these proceedings as well. The conference was completed with invited presentations by Mark Crovella (Boston University) and Leon Alkalai (Jet Propulsion Laboratory) for TOOLS 2000 and IPDS 2000, respectively.

We thank the programme and steering committee members, as well as the reviewers they assigned, for the wonderful task they did in preparing all the reviews within a very short time. We also thank the participants of the electronic programme committee meeting for their contribution in selecting the right papers. We thank Motorola for hosting this joint conference. Finally, most importantly, we thank all the authors of submitted papers. Without their submissions, this conference would not exist! We hope you found the conference fruitful and inspiring!

January 2000 Boudewijn R. Haverkort, Connie Smith

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Organisation

The TOOLS 2000 conference was organised at Motorola's Galvin Center in Schaumburg (Illinois, USA). The organisational committee comprised the following Motorola staff members:

- James Han (registration)
- Tizhi Huang (finances)
- Haim Levendel (general chair)
- MaryAnn Tarczon (local arrangements)

TOOLS 2000 was sponsored by

- IBM Global Services
- Motorola

and enjoyed institutional co-sponsorship from

- ACM Sigmetrics
- IEEE Computer Society Technical Committee on Fault-Tolerant Computing
- IFIP working group 6.3 (Performance of Communication Systems)
- IFIP working group 7.3 (Computer System Modelling)
- IFIP working group 10.4 (Dependable Computing and Fault-Tolerance)
- L&S Computer Technology, Santa Fe, New Mexico, USA
- RWTH Aachen, Department of Computer Science, Germany

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