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Jerzy Tiuryn (Ed.)

Foundations of Software Science and Computation Structures

Third International Conference, FOSSACS 2000
Held as Part of the Joint European Conferences
on Theory and Practice of Software, ETAPS 2000
Berlin, Germany, March 25 – April 2, 2000
Proceedings



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Foreword

ETAPS 2000 was the third instance of the European Joint Conferences on Theory and Practice of Software. ETAPS is an annual federated conference that was established in 1998 by combining a number of existing and new conferences. This year it comprised five conferences (FOSSACS, FASE, ESOP, CC, TACAS), five satellite workshops (CBS, CMCS, CoFI, GRATRA, INT), seven invited lectures, a panel discussion, and ten tutorials.

The events that comprise ETAPS address various aspects of the system development process, including specification, design, implementation, analysis, and improvement. The languages, methodologies, and tools which support these activities are all well within its scope. Different blends of theory and practice are represented, with an inclination towards theory with a practical motivation on one hand and soundly-based practice on the other. Many of the issues involved in software design apply to systems in general, including hardware systems, and the emphasis on software is not intended to be exclusive.

ETAPS is a loose confederation in which each event retains its own identity, with a separate program committee and independent proceedings. Its format is open-ended, allowing it to grow and evolve as time goes by. Contributed talks and system demonstrations are in synchronized parallel sessions, with invited lectures in plenary sessions. Two of the invited lectures are reserved for “unifying” talks on topics of interest to the whole range of ETAPS attendees. The aim of cramming all this activity into a single one-week meeting is to create a strong magnet for academic and industrial researchers working on topics within its scope, giving them the opportunity to learn about research in related areas, and thereby to foster new and existing links between work in areas that were formerly addressed in separate meetings. The program of ETAPS 2000 included a public business meeting where participants had the opportunity to learn about the present and future organization of ETAPS and to express their opinions about what is bad, what is good, and what might be improved.

ETAPS 2000 was hosted by the Technical University of Berlin and was efficiently organized by the following team:

Bernd Mahr (General Chair)
Hartmut Ehrig (Program Coordination)
Peter Pepper (Organization)
Stefan Jähnichen (Finances)
Radu Popescu-Zeletin (Industrial Relations)

with the assistance of BWO Marketing Service GmbH. The publicity was superbly handled by Doris Fähndrich of the TU Berlin with assistance from the ETAPS publicity chair, Andreas Podelski. Overall planning for ETAPS conferences is the responsibility of the ETAPS steering committee, whose current membership is:

Egidio Astesiano (Genova), Jan Bergstra (Amsterdam), Pierpaolo Degano (Pisa), Hartmut Ehrig (Berlin), José Fiadeiro (Lisbon), Marie-Claude Gaudel (Paris), Susanne Graf (Grenoble), Furio Honsell (Udine), Heinrich Hußmann (Dresden), Stefan Jähnichen (Berlin), Paul Klint (Amsterdam), Tom Maibaum (London), Tiziana Margaria (Dortmund), Ugo Montanari (Pisa), Hanne Riis Nielson (Aarhus), Fernando Orejas (Barcelona), Andreas Podelski (Saarbrücken), David Sands (Göteborg), Don Sannella (Edinburgh), Gert Smolka (Saarbrücken), Bernhard Steffen (Dortmund), Wolfgang Thomas (Aachen), Jerzy Tiuryn (Warsaw), David Watt (Glasgow), Reinhard Wilhelm (Saarbrücken)

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I would like to express my sincere gratitude to all of these people and organizations, the program committee members of the ETAPS conferences, the organizers of the satellite events, the speakers themselves, and finally Springer-Verlag for agreeing to publish the ETAPS proceedings.

January 2000

Donald Sannella
ETAPS Steering Committee chairman

Preface

This volume contains the proceedings of the international conference Foundations of Software Science and Computation Structures (FOSSACS 2000), held in Berlin, March 27–31, 2000. FOSSACS is a constituent event of the Joint European Conferences on Theory and Practice of Software (ETAPS). This was the third meeting of ETAPS. The previous two meetings took place in Lisbon (1998) and Amsterdam (1999).

FOSSACS seeks papers which offer progress in foundational research with a clear significance for software science. A central issue is theories and methods which support the specification, transformation, verification, and analysis of programs and software systems. The articles contained in the proceedings represent various aspects of the scope of the conference described above. In addition to the invited lectures of ETAPS 2000, FOSSACS 2000 had one invited lecture by Abbas Edalat (Imperial College, London) “A Data Type for Computational Geometry and Solid Modelling”.

These proceedings contain 25 contributed papers, selected out of a total of 68 submissions. This has been the largest number of submissions to FOSSACS to date. The selection procedure was done through a virtual meeting of the program committee. Each paper was thoroughly evaluated by the members of the program committee and their subreferees. I would like to sincerely thank all of them for the excellent job they did during the very difficult process of selecting the papers. Special thanks go to Robert Maron for his help in organizing the WWW page for the selection process and for his continuous efforts in maintaining and processing large data files.

January 2000

Jerzy Tiuryn

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