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Fundamental Approaches to Software Engineering

8th International Conference, FASE 2005
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on Theory and Practice of Software, ETAPS 2005
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Proceedings

Volume Editor

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Foreword

ETAPS 2005 was the eighth 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 (CC, ESOP, FASE, FOSSACS, TACAS), 17 satellite workshops (AVIS, BYTECODE, CEES, CLASE, CMSB, COCV, FAC, FESCA, FINCO, GCW-DSE, GLPL, LDTA, QAPL, SC, SLAP, TGC, UITP), seven invited lectures (not including those that were specific to the satellite events), and several tutorials. We received over 550 submissions to the five conferences this year, giving acceptance rates below 30% for each one. Congratulations to all the authors who made it to the final program! I hope that most of the other authors still found a way of participating in this exciting event and I hope you will continue submitting.

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 the 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 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.

ETAPS 2005 was organized by the School of Informatics of the University of Edinburgh, in cooperation with

- European Association for Theoretical Computer Science (EATCS);
- European Association for Programming Languages and Systems (EAPLS);
- European Association of Software Science and Technology (EASST).

The organizing team comprised:

- Chair: Don Sannella
- Publicity: David Aspinall
- Satellite Events: Massimo Felici

- Secretariat: Dyane Goodchild
- Local Arrangements: Monika-Jeannette Lekuse
- Tutorials: Alberto Momigliano
- Finances: Ian Stark
- Website: Jennifer Tenzer, Daniel Winterstein
- Fundraising: Phil Wadler

ETAPS 2005 received support from the University of Edinburgh.

Overall planning for ETAPS conferences is the responsibility of its Steering Committee, whose current membership is:

Perdita Stevens (Edinburgh, Chair), Luca Aceto (Aalborg and Reykjavík), Rastislav Bodik (Berkeley), Maura Cerioli (Genoa), Evelyn Duesterwald (IBM, USA), Hartmut Ehrig (Berlin), José Fiadeiro (Leicester), Marie-Claude Gaudel (Paris), Roberto Gorrieri (Bologna), Reiko Heckel (Paderborn), Holger Hermanns (Saarbrücken), Joost-Pieter Katoen (Aachen), Paul Klint (Amsterdam), Jens Knoop (Vienna), Kim Larsen (Aalborg), Tiziana Margaria (Dortmund), Ugo Montanari (Pisa), Hanne Riis Nielson (Copenhagen), Fernando Orejas (Barcelona), Mooly Sagiv (Tel Aviv), Don Sannella (Edinburgh), Vladimiro Sassone (Sussex), Peter Sestoft (Copenhagen), Michel Wermelinger (Lisbon), Igor Walukiewicz (Bordeaux), Andreas Zeller (Saarbrücken), Lenore Zuck (Chicago).

I would like to express my sincere gratitude to all of these people and organizations, the program committee chairs and PC members of the ETAPS conferences, the organizers of the satellite events, the speakers themselves, the many reviewers, and Springer for agreeing to publish the ETAPS proceedings. Finally, I would like to thank the organizer of ETAPS 2005, Don Sannella. He has been instrumental in the development of ETAPS since its beginning; it is quite beyond the limits of what might be expected that, in addition to all the work he has done as the original ETAPS Steering Committee Chairman and current ETAPS Treasurer, he has been prepared to take on the task of organizing this instance of ETAPS. It gives me particular pleasure to thank him for organizing ETAPS in this wonderful city of Edinburgh in this my first year as ETAPS Steering Committee Chair.

Edinburgh, January 2005

Perdita Stevens
ETAPS Steering Committee Chair

Preface

The conference on Fundamental Approaches to Software Engineering (FASE) is one of the European Joint Conferences on Theory and Practice of Software (ETAPS). As such, it provides a common forum for practitioners and researchers to discuss theories for supporting and improving software engineering practices and their practical application in real contexts.

Contributions were sought targeting both pragmatic concepts and their formal foundations which could lead to new engineering practices and a higher level of reliability, robustness, and evolvability of heterogeneous software federations.

The record submission of 99 research papers and 6 tool demos was the response of the scientific community, with contributions ranging from theoretical aspects, such as graph grammars, graph transformation, agent theory and algebraic specification languages, to applications to industrially used languages, methods, technologies, and tools, including UML, Web services, product lines, component-based development, Java, and Java cards.

The scientific program was complemented by the invited lectures of Gérard Berry on *Esterel v7: from Verified Formal Specification to Efficient Industrial Designs* and of Thomas A. Henzinger on *Checking Memory Safety with Blast*.

The authors of the submissions were from 29 countries, both within Europe (Belgium, Denmark, Finland, France, Germany, Hungary, Ireland, Italy, Luxembourg, Macedonia, Portugal, Spain, Sweden, Switzerland, The Netherlands, United Kingdom) and outside (Australia, Brazil, Canada, China, India, Japan, Korea, Pakistan, Russia, Thailand, Tunisia, Turkey, USA). It is a pleasure to note the increasing number of submissions from eastern Europe and from outside Europe altogether, showing that FASE is gaining importance as a world-wide conference.

The help of the Program Committee was invaluable in selecting just 25 papers (3 of them tool demos) from the large number of high-quality submissions, and I take the opportunity to thank warmly all its members and the other referees for supporting the selection process with their precious time.

FASE 2005 was held in Edinburgh, hosted and organized by the School of Informatics of the University of Edinburgh. Next year FASE will take place in Vienna (Austria).

Being part of ETAPS, FASE shares the sponsoring and support described by the ETAPS Chair in the Foreword. Heartfelt thanks are also due to José Fiadeiro and Perdita Stevens for their great efforts in the global ETAPS organization and to Don Sannella and his staff for the wonderful job as local organizers.

Finally, a special thanks to the contributors to and participants of FASE, who in the end are the people making the conference worthwhile.

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