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Fundamental Approaches to Software Engineering

17th International Conference, FASE 2014
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Foreword

ETAPS 2014 was the 17th instance of the European Joint Conferences on Theory and Practice of Software. ETAPS is an annual federated conference that was established in 1998, and this year consisted of six constituting conferences (CC, ESOP, FASE, FoSSaCS, TACAS, and POST) including eight invited speakers and two tutorial speakers. Before and after the main conference, numerous satellite workshops took place and attracted many researchers from all over the globe.

ETAPS is a confederation of several conferences, each with its own Program Committee (PC) and its own Steering Committee (if any). The conferences cover various aspects of software systems, ranging from theoretical foundations to programming language developments, compiler advancements, analysis tools, formal approaches to software engineering, and security. Organizing these conferences in a coherent, highly synchronized conference program, enables the participation in an exciting event, having the possibility to meet many researchers working in different directions in the field, and to easily attend the talks of different conferences.

The six main conferences together received 606 submissions this year, 155 of which were accepted (including 12 tool demonstration papers), yielding an overall acceptance rate of 25.6%. I thank all authors for their interest in ETAPS, all reviewers for the peer reviewing process, the PC members for their involvement, and in particular the PC co-chairs for running this entire intensive process. Last but not least, my congratulations to all authors of the accepted papers!

ETAPS 2014 was greatly enriched by the invited talks of Geoffrey Smith (Florida International University, USA) and John Launchbury (Galois, USA), both unifying speakers, and the conference-specific invited speakers (CC) Benoît Dupont de Dinechin (Kalray, France), (ESOP) Maurice Herlihy (Brown University, USA), (FASE) Christel Baier (Technical University of Dresden, Germany), (FoSSaCS) Petr Jančar (Technical University of Ostrava, Czech Republic), (POST) David Mazières (Stanford University, USA), and finally (TACAS) Orna Kupferman (Hebrew University Jerusalem, Israel). Invited tutorials were provided by Bernd Finkbeiner (Saarland University, Germany) and Andy Gordon (Microsoft Research, Cambridge, UK). My sincere thanks to all these speakers for their great contributions.

For the first time in its history, ETAPS returned to a city where it had been organized before: Grenoble, France. ETAPS 2014 was organized by the Université Joseph Fourier in cooperation with the following associations and societies: ETAPS e.V., EATCS (European Association for Theoretical Computer Science), EAPLS (European Association for Programming Languages and Systems), and EASST (European Association of Software Science and Technology). It had

support from the following sponsors: CNRS, Inria, Grenoble INP, PERSYVAL-Lab and Université Joseph Fourier, and Springer-Verlag.

The organization team comprised:

General Chair: Saddek Bensalem
 Conferences Chair: Alain Girault and Yassine Lakhnech
 Workshops Chair: Axel Legay
 Publicity Chair: Yliès Falcone
 Treasurer: Nicolas Halbwachs
 Webmaster: Marius Bozga

The overall planning for ETAPS is the responsibility of the Steering Committee (SC). The ETAPS SC consists of an executive board (EB) and representatives of the individual ETAPS conferences, as well as representatives of EATCS, EAPLS, and EASST. The Executive Board comprises Gilles Barthe (satellite events, Madrid), Holger Hermanns (Saarbrücken), Joost-Pieter Katoen (chair, Aachen and Twente), Gerald Lüttgen (treasurer, Bamberg), and Tarmo Uustalu (publicity, Tallinn). Other current SC members are: Martín Abadi (Santa Cruz and Mountain View), Erika Ábráham (Aachen), Roberto Amadio (Paris), Christel Baier (Dresden), Saddek Bensalem (Grenoble), Giuseppe Castagna (Paris), Albert Cohen (Paris), Alexander Egyed (Linz), Riccardo Focardi (Venice), Björn Franke (Edinburgh), Stefania Gnesi (Pisa), Klaus Havelund (Pasadena), Reiko Heckel (Leicester), Paul Klint (Amsterdam), Jens Knoop (Vienna), Steve Kremer (Nancy), Pasquale Malacaria (London), Tiziana Margaria (Potsdam), Fabio Martinelli (Pisa), Andrew Myers (Boston), Anca Muscholl (Bordeaux), Catuscia Palamidessi (Palaiseau), Andrew Pitts (Cambridge), Arend Rensink (Twente), Don Sanella (Edinburgh), Vladimiro Sassone (Southampton), Ina Schäfer (Braunschweig), Zhong Shao (New Haven), Gabriele Taentzer (Marburg), Cesare Tinelli (Iowa), Jan Vitek (West Lafayette), and Lenore Zuck (Chicago).

I sincerely thank all ETAPS SC members for all their hard work in making the 17th ETAPS a success. Moreover, thanks to all speakers, attendants, organizers of the satellite workshops, and Springer for their support. Finally, many thanks to Saddek Bensalem and his local organization team for all their efforts enabling ETAPS to return to the French Alps in Grenoble!

Preface

This volume contains the proceedings of FASE 2014, the 17th International Conferences on Fundamental Approaches to Software Engineering, which was held in Grenoble, Italy, in April 2014 as part of the annual European Joint Conferences on Theory and Practice of Software (ETAPS).

As with previous editions of FASE, this year's papers presented foundational contributions to a broad range of topics in software engineering, including software verification and validation, model-driven engineering, debugging, and testing. This year we received 125 submissions from 35 countries, of which 28 were accepted by the Program Committee for presentation at the conference, constituting an acceptance rate of approximately 22%. Each paper received a minimum of three reviews; acceptance decisions were reached through online discussions among the members of the Program Committee.

We were honored to host Christel Baier from the Technische Universität Dresden (Germany) as the FASE keynote speaker at ETAPS 2014. She gave a talk entitled "Probabilistic Model Checking and Non-standard Multi-objective Reasoning" (the paper is included in these proceedings). Christel is an internationally recognized researcher who has made major contributions to the field of quantitative analysis of stochastic systems and probabilistic model checking.

Many persons contributed to the success of FASE 2014. Authors of all submitted papers represent the core of such a conference, and we believe that the accepted papers make significant advances in the foundations of software engineering. However, the program could not have been assembled without the great effort of the Program Committee members and their sub-reviewers in critically assessing and discussing the papers: thanks a lot for your active participation! We also express our full gratitude to the additional reviewers coming to our aid at the last minute to provide additional insights for papers under dispute, for producing high-quality reviews in a very short time. Finally, we thank Gabriele Taentzer, the FASE Steering Committee Chair, for her timely and accurate responses to our queries about the whole process management, and the ETAPS Steering and Organizing Committees for their coordination work.

We sincerely hope you enjoy these proceedings!

January 2014

Stefania Gnesi
Arend Rensink

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