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# Compiler Construction

19th International Conference, CC 2010
Held as Part of the Joint European Conferences
on Theory and Practice of Software, ETAPS 2010
Paphos, Cyprus, March 20-28, 2010
Proceedings

Springer

Volume Editor

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# Foreword

ETAPS 2010 was the 13th 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 the usual five sister conferences (CC, ESOP, FASE, FOSSACS, TACAS), 19 satellite workshops (ACCAT, ARSPA-WITS, Bytecode, CMCS, COCV, DCC, DICE, FBTC, FESCA, FOSS-AMA, GaLoP, GT-VMT, LDTA, MBT, PLACES, QAPL, SafeCert, WGT, and WRLA) and seven invited lectures (excluding those that were specific to the satellite events). The five main conferences this year received 497 submissions (including 31 tool demonstration papers), 130 of which were accepted (10 tool demos), giving an overall acceptance rate of 26%, with most of the conferences at around 24%. Congratulations therefore to all the authors who made it to the final programme! I hope that most of the other authors will still have found a way of participating in this exciting event, and that you will all continue submitting to ETAPS and contributing to make of it the best conference on software science and engineering.

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 toward 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 confederation in which each event retains its own identity, with a separate Programme 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 synchronised 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 2010 was organised by the University of Cyprus 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)

and with support from the Cyprus Tourism Organisation.

The organising team comprised:

| | |
|---|---|
| General Chairs: | Tiziana Margaria and Anna Philippou |
| Local Chair: | George Papadopoulos |
| Secretariat: | Maria Kittira |
| Administration: | Petros Stratis |
| Satellite Events: | Anna Philippou |
| Website: | Konstantinos Kakousis. |

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

Vladimiro Sassone (Southampton, Chair), Parosh Abdulla (Uppsala), Luca de Alfaro (Santa Cruz), Gilles Barthe (IMDEA-Software), Giuseppe Castagna (CNRS Paris), Marsha Chechik (Toronto), Sophia Drossopoulou (Imperial College London), Javier Esparza (TU Munich), Dimitra Giannakopoulou (CMU/NASA Ames), Andrew D. Gordon (MSR Cambridge), Rajiv Gupta (UC Riverside), Chris Hankin (Imperial College London), Holger Hermanns (Saarbrücken), Mike Hinchey (Lero, the Irish Software Engineering Research Centre), Martin Hofmann (LM Munich), Joost-Pieter Katoen (Aachen), Paul Klint (Amsterdam), Jens Knoop (Vienna), Shriram Krishnamurthi (Brown), Kim Larsen (Aalborg), Rustan Leino (MSR Redmond), Gerald Luettgen (Bamberg), Rupak Majumdar (Los Angeles), Tiziana Margaria (Potsdam), Ugo Montanari (Pisa), Oege de Moor (Oxford), Luke Ong (Oxford), Fernando Orejas (Barcelona) Catuscia Palamidessi (INRIA Paris), George Papadopoulos (Cyprus), David Rosenblum (UCL), Don Sannella (Edinburgh), João Saraiva (Minho), Michael Schwartzbach (Aarhus), Perdita Stevens (Edinburgh), Gabriele Taentzer (Marburg), and Martin Wirsing (LM Munich).

I would like to express my sincere gratitude to all of these people and organisations, the Programme Committee Chairs and members of the ETAPS conferences, the organisers of the satellite events, the speakers themselves, the many reviewers, all the participants, and Springer for agreeing to publish the ETAPS proceedings in the ARCoSS subline.

Finally, I would like to thank the Organising Chair of ETAPS 2010, George Papadopoulos, for arranging for us to have ETAPS in the most beautiful surroundings of Paphos.

January 2010 Vladimiro Sassone

# Preface

The CC 2010 Programme Committee is pleased to present the proceedings of the 19th International Conference on Compiler Construction (CC 2010) which was held during March 25–26 in Paphos, Cyprus, as part of the Joint European Conference on Theory and Practice of Software (ETAPS 2010). As in the last few years, papers were solicited on a wide range of areas including traditional compiler construction, compiler analyses, runtime systems and tools, programming tools, techniques for specific domains, and the design and implementation of novel language constructs. We received submissions from a wide variety of areas and the papers in this volume reflect this variety.

The Programme Committee received 56 submissions. From these, 16 research papers were selected, giving an overall acceptance rate of 28%. The Programme Committee carried out the reviewing and paper selection completely electronically, in two rounds. In the first round at least three Programme Committee members reviewed each paper, and through discussion among the reviewers those papers which were definite "accepts" and those which needed further discussion were identified. Our second round concentrated on the papers needing further discussion, and we added an additional review to help us decide which papers to finally accept.

Many people contributed to the success of this conference. First of all, we would like to thank the authors for all the care they put into their submissions. Our gratitude also goes to the Programme Committee members and external reviewers for their substantive and insightful reviews. Also, thanks go to the developers and supporters of the EasyChair conference management system for providing a reliable, sophisticated and free service.

CC 2010 was made possible by the ETAPS Steering Committee and the local Organizing Committee. Finally, we are grateful to Jim Larus for giving the CC 2010 invited talk.

January 2010 Rajiv Gupta

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# Table of Contents

## Invited Talk

Programming Clouds . . . . . 1
*James Larus*

## Optimization Techniques

Mining Opportunities for Code Improvement in a Just-In-Time Compiler . . . . . 10
*Adam Jocksch, Marcel Mitran, Joran Siu, Nikola Grcevski, and José Nelson Amaral*

Unrestricted Code Motion: A Program Representation and Transformation Algorithms Based on Future Values . . . . . 26
*Shuhan Ding and Soner Önder*

Optimizing MATLAB through Just-In-Time Specialization . . . . . 46
*Maxime Chevalier-Boisvert, Laurie Hendren, and Clark Verbrugge*

RATA: Rapid Atomic Type Analysis by Abstract Interpretation – Application to `JavaScript` Optimization . . . . . 66
*Francesco Logozzo and Herman Venter*

## Program Transformations

JReq: Database Queries in Imperative Languages . . . . . 84
*Ming-Yee Iu, Emmanuel Cecchet, and Willy Zwaenepoel*

Verifying Local Transformations on Relaxed Memory Models . . . . . 104
*Sebastian Burckhardt, Madanlal Musuvathi, and Vasu Singh*

## Program Analysis

Practical Extensions to the IFDS Algorithm . . . . . 124
*Nomair A. Naeem, Ondřej Lhoták, and Jonathan Rodriguez*

Using Ownership to Reason about Inherent Parallelism in Object-Oriented Programs . . . . . 145
*Andrew Craik and Wayne Kelly*

## Register Allocation

Punctual Coalescing . . . . . 165
*Fernando Magno Quintão Pereira and Jens Palsberg*

Strategies for Predicate-Aware Register Allocation . . . . . 185
*Gerolf F. Hoflehner*

Preference-Guided Register Assignment . . . . . 205
*Matthias Braun, Christoph Mallon, and Sebastian Hack*

Validating Register Allocation and Spilling . . . . . 224
*Silvain Rideau and Xavier Leroy*

## High-Performance Systems

Automatic C-to-CUDA Code Generation for Affine Programs . . . . . 244
*Muthu Manikandan Baskaran, J. Ramanujam, and P. Sadayappan*

Is Reuse Distance Applicable to Data Locality Analysis on Chip Multiprocessors? . . . . . 264
*Yunlian Jiang, Eddy Z. Zhang, Kai Tian, and Xipeng Shen*

The Polyhedral Model Is More Widely Applicable Than You Think . . . . 283
*Mohamed-Walid Benabderrahmane, Louis-Noël Pouchet, Albert Cohen, and Cédric Bastoul*

The Hot Path SSA Form: Extending the Static Single Assignment Form for Speculative Optimizations . . . . . 304
*Subhajit Roy and Y.N. Srikant*

**Author Index** . . . . . 325