Lecture Notes in Computer Science 2294
Edited by G. Goos, J. Hartmanis, and J. van Leeuwen

Springer
Berlin
Heidelberg
New York
Barcelona
Hong Kong
London
Milan
Paris
Tokyo

Agostino Cortesi (Ed.)

Verification, Model Checking, and Abstract Interpretation

Third International Workshop, VMCAI 2002
Venice, Italy, January 21-22, 2002
Revised Papers

Springer

Volume Editor

Agostino Cortesi
Università Ca' Foscari di Venezia
Dipartimento di Informatica
Via Torino 155, 30170 Mestre-Venezia, Italy
E-mail: cortesi@dsi.unive.it

Cataloging-in-Publication Data applied for

Die Deutsche Bibliothek - CIP-Einheitsaufnahme

Verification, model checking, and abstract interpretation : third international workshop ; revised papers / VMCAI 2002, Venice, Italy, January 21 - 22, 2002. Agostino Cortesi (ed.). - Berlin ; Heidelberg ; New York ; Barcelona ; Hong Kong ; London ; Milan ; Paris ; Tokyo : Springer, 2002
(Lecture notes in computer science ; Vol. 2294)
ISBN 3-540-43631-6

CR Subject Classification (1998): F.3.1-2, D.3.1, D.2.4

ISSN 0302-9743
ISBN 3-540-43631-6 Springer-Verlag Berlin Heidelberg New York

Springer-Verlag Berlin Heidelberg New York
a member of BertelsmannSpringer Science+Business Media GmbH

http://www.springer.de

Typesetting: Camera-ready by author, data conversion by Boller Mediendesign
Printed on acid-free paper SPIN 10722206 06/3142 5 4 3 2 1 0

Preface

This volume contains the revised version of papers presented at VMCAI 2002, the Third International Workshop on Verification, Model Checking, and Abstract Interpretation, Venice (Italy), January 21-22, 2002.

The main goal of the workshop was to give an overview of the main directions decisive for the growth and cross-fertilization of major research activities in program analysis and verification.

The VMCAI series was started in 1997 with the aim of gathering researchers interested in investigating similarities and differences among these three research methodologies, that may be summarized as follows:

- program verification aims at proving that programs meet their specifications, i.e., that the actual program behavior corresponds to the desired one.
- model checking is a specific approach to the verification of temporal properties of reactive and concurrent systems, which has been very successful in the area of finite-state programs.
- abstract interpretation is a method for designing and comparing semantics of program, expressing various types of program properties; in particular, it has been successfully used to infer run-time program properties that can be valuable in optimizing programs.

The program committee selected 22 papers out of 41 submissions on the basis of at least 3 reviews. The principal selection criteria were relevance, quality, and clarity. The resulting volume offers the reader an interesting perspective of the current research trends in the area. In particular, the papers contribute to the following topics: Security and Protocols, Timed Systems and Games, Static Analysis, Optimizations, Types and Verification, and Temporal Logics and Systems.

The quality of the papers, the interesting discussions at the workshop, and the friendly atmosphere enjoyed by all participants in Venice, encouraged us in the project of making VMCAI an annual privileged forum for researchers in the area.

Special thanks are due to the institutions that sponsored the event: the Computer Science Department of the University Ca' Foscari, the European Association for Programming Languages and Systems (EAPLS), the MIUR Project "Interpretazione Astratta, Type Systems e Analisi Control-Flow" and the MIUR Project "Metodi Formali per la Sicurezza - MEFISTO". We are especially grateful to C. Braghin for her helpful support in organizing the workshop.

March 2002 Agostino Cortesi

Program Committee Chair

Agostino Cortesi	Univ. Ca' Foscari - Venezia (Italy)

Program Committee

Annalisa Bossi	Univ. Ca' Foscari
Dennis Dams	Bell Labs and TU Eindhoven
Javier Esparza	TU Munchen
Chris Hankin	Imperial College
Joxan Jaffar	NU Singapore
Thomas Jensen	Irisa Rennes
Cosimo Laneve	Univ. di Bologna
Baudouin Le Charlier	UC Louvain La Neuve
Michael Leuschel	Univ. of Southampton
Giorgio Levi	Univ. di Pisa
Torben Mogensen	DIKU, Copenhagen
Supratik Mukhopadhyay	Univ. of Pennsylvania
Thomas Reps	Univ. of Wisconsin
Hanne Riis Nielson	TU of Denmark
David Schmidt	Kansas State University
Pascal Van Hentenryck	Brown University

Additional Referees

Busi Nadia	Levi Francesca	Scozzari Francesca
Charatonik Witold	Levin Vladimir	Sharygina Natasha
Thao Dang	Lovengreen Hans Henrik	Sokolsky Oleg
Di Pierro Alessandra	Maggiolo Schettini Andrea	Spoto Fausto
Elphick Daniel	Maier Patrick	Steffen Martin
Faella Marco	Martinelli Fabio	Sun Hongyan
Ferrari Gianluigi	Murano Aniello	Taguchi Kenji
Giacobazzi Roberto	Namjoshi Kedar	Thiagarajan P.S.
Godefroid Patrice	Ngan Chin Wei	Tronci Enrico
Gori Roberta	Pinna Michele	Varea Mauricio
Hansen Michael R.	Ravi Kavita	Voicu Razvan
Hansen Rene Rydhof	Roychoudhury Abhik	Xiaoqun Du
Khoo Siau-Cheng	Sacerdoti Coen Claudio	Zavattaro Gianluigi
La Torre Salvatore		

Table of Contents

Optimizations

Types and Verification

Temporal Logics and Systems