Lecture Notes in Computer Science 1581

Edited by G. Goos, J. Hartmanis and J. van Leeuwen

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

Jean-Yves Girard (Ed.)

Typed Lambda Calculi and Applications

4th International Conference, TLCA'99
L'Aquila, Italy, April 7-9, 1999
Proceedings

Springer

Volume Editor

J.-Y. Girard
Institut de Mathématiques de Luminy, CNRS - UPR9016
163 Avenue de Luminy, case 907
F-13288 Marseille cedex 9, France
E-mail: girard@iml.univ-mrs.fr

Cataloging-in-Publication data applied for

Die Deutsche Bibliothek - CIP-Einheitsaufnahme

Typed lambda calculi and applications : 4th international conference / TLCA'99, L'Aquila, Italy, April 7 - 9, 1999. Jean-Yves Girard (ed.). - Berlin ; Heidelberg ; New York ; Barcelona ; Hong Kong ; London ; Milan ; Paris ; Singapore ; Tokyo : Springer, 1999
(Lecture notes in computer science ; Vol. 1581)
ISBN 3-540-65763-0

CR Subject Classification (1998): F.4.1, F.3, D.1.1

ISSN 0302-9743
ISBN 3-540-65763-0 Springer-Verlag Berlin Heidelberg New York

Typesetting: Camera-ready by author
SPIN 10703139 06/3142 – 5 4 3 2 1 0 Printed on acid-free paper

Preface

This volume represents the proceedings of the Fourth International Conference on Typed Lambda Calculi and Applications, TLCA'99, held in L'Aquila, on 7-9 April 1999.

It contains 25 contributions. Fifty were submitted, their overall quality was high, and selection was difficult. The Programme Committee is very grateful to everyone who submitted a paper. It also contains two papers introducing the "demos" of "tlca software", i.e. industrial products making use of typed lambda-calculi.

The tutorials on

- *Denotational semantics* by Thomas Ehrhard and John Longley, and
- *Intersection types* by Mario Coppo and Mariangiola Dezani are not included in this volume.

The editor wishes to thank the members of the Programme Committee and the Organizing Committee listed, for their hard work and support, with a special mention for Benedetto Intrigila. He also thanks Corrado Böhm for kindly accepting the task of delivering a banquet speech.

The editor also expresses his gratitude to all the referees listed on the next page, as well as to those who wish not to be listed for their essential assistance and time generously given.

Marseille, January 1999 Jean-Yves Girard

Programme Committee

S. Abramsky (Edinburgh)
J.-Y. Girard (Marseille) (Chair)
J.-L. Krivine (Paris)
S. Ronchi (Torino)
T. Streicher (Darmstadt)
P. Urzyczyn (Warszawa)
T. Coquand (Göteborg)
R. Hindley (Swansea)
J. Reynolds (Pittsburgh)
A. Scedrov (Philadelphia)
M. Takahashi (Tôkyô)

Organizing Committee

F. Corradini, **A. Formisano**, **B. Intrigila**, (Chair), **M.-C. Meo**, **M. Nesi**, **A. Pierantonio**, **I. Salvo**, **S. Sorgi**

(Dip. Matematica , L'Aquila and Dip.Informatica, La Sapienza, Roma)

Referees

Y. Akama
O. Bastonero
V. Bono
I. Cervesato
M. Coppo
R. Davies
R. Dickhoff
S. Guerrini
M. Hofmann
Y. Kameyama
T. Kurata
P. B. Levy
P.-A. Mellies
M. Parigot
A. Piperno
E. Ritter
P. Ruet
R.A.G. Seely
C. Stewart
J. Vauzeilles
T. Altenkirch
S. Berardi
M. Bugliesi
G. Chen
T. Crolard
P. De Groote
H. Geuvers
B. Harper
K. Honda
M. Kanovich
Y. Lafont
C. Mc Bride
G. Mitschke
C. Paulin
L. Regnier
K. Rose
A. Schalk
P. Selinger
I. Takeuti
M. Wehr
F. Barbanera
A. Berarducci
F. Cardone
R. Cockett
P.-L. Curien
U. De Liguoro
N. Ghani
R. Hasegawa
R. Jagadeesan
R. Kashima
J. Laird
M. Marz
H. Nickau
F. Pfenning
J. Rehof
L. Roversi
C. Schüermann
M. H. Sörensen
M. Tameyama
J. Wells
H. Barendregt
C. Berline
G. Castagna
A. Compagnoni
V. Danos
M. Dezani
P. Giannini
H. Herbelin
T. Jim
Y. Kinoshita
F. Lamarche
R. Matthes
S. Nishizaki
B. Pierce
D. Remy
P. Roziere
P.J. Scott
R. Statman
C. Urban
H. Yokouchi

Table of Contents

Invited demonstrations

Contributions