Lecture Notes in Computer Science 3643

Commenced Publication in 1973
Founding and Former Series Editors:
Gerhard Goos, Juris Hartmanis, and Jan van Leeuwen

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Computer Aided Systems Theory – EUROCAST 2005

10th International Conference on Computer Aided Systems Theory
Las Palmas de Gran Canaria, Spain, February 7 – 11, 2005
Revised Selected Papers

Springer

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Library of Congress Control Number: 2005932551

CR Subject Classification (1998): J.6, I.6, I.2, J.7, J.3, C.1.m, C.3, F.4, F.3

ISSN 0302-9743
ISBN-10 3-540-29002-8 Springer Berlin Heidelberg New York
ISBN-13 978-3-540-29002-5 Springer Berlin Heidelberg New York

Typesetting: Camera-ready by author, data conversion by Scientific Publishing Services, Chennai, India
Printed on acid-free paper SPIN: 11556985 06/3142 5 4 3 2 1 0

Preface

The concept of CAST, computer aided systems Theory, was introduced by F. Pichler of Linz in the late 1980s to include those computer theoretical and practical developments used as tools to solve problems in system science. It was considered as the third component (the other two being CAD and CAM) that would provide for a complete picture of the path from computer and systems sciences to practical developments in science and engineering.

The University of Linz organized the first CAST workshop in April 1988, which demonstrated the acceptance of the concepts by the scientific and technical community. Next, the University of Las Palmas de Gran Canaria joined the University of Linz to organize the first international meeting on CAST (Las Palmas February 1989), under the name EUROCAST 1989, a very successful gathering of systems theorists, computer scientists and engineers from most European countries, North America and Japan.

It was agreed that EUROCAST international conferences would be organized every two years. Thus, the following EUROCAST meetings took place in Krems (1991), Las Palmas (1993), Innsbruck (1995), Las Palmas (1997), Vienna (1999), Las Palmas (2001) and Las Palmas (2003) in addition to an extra-European CAST conference in Ottawa in 1994. Selected papers from those meetings were published as Springer Lecture Notes in Computer Science vols. 410, 585, 763, 1030, 1333, 1728, 2178 and 2809 and in several special issues of Cybernetics and Systems: an lnternational Journal. EUROCAST and CAST meetings are definitely consolidated, as has been demonstrated by the number and quality of the contributions over the years.

EUROCAST 2005 (Las Palmas, February 2005) continued with a new approach to the conferences which was adopted in 2001. Besides the classical core on generic CAST, chaired by Pichler and Moreno-Diaz, there were workshops on Computation and Simulation in Modelling Biological Systems, chaired by Ricciardi (Naples); Cryptography, chaired by Müller (Klagenfurt); Intelligent Information Processing, chaired by Freire (A Coruña); Robotics and Robot Soccer, chaired by Kopacek (Vienna) and Pfalgraf (Salzburg); Spectral Methods, chaired by Astola (Tampere); and Computer Vision and Intelligent Vehicular Systems, chaired by Maravall and García Rosa (Madrid).

This volume contains the full papers selected after the oral presentations of the different sessions. The editors would like to thank all contributors for their quickness in providing their material in hard and electronic forms. Special thanks are due to the staff of Springer Heidelberg for their valuable support.

July 2005 Roberto Moreno-Díaz, Franz Pichler and Alexis Quesada-Arencibia

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