

Preface

ICIAR 2004, the International Conference on Image Analysis and Recognition, was the first ICIAR conference, and was held in Porto, Portugal. ICIAR will be organized annually, and will alternate between Europe and North America. ICIAR 2005 will take place in Toronto, Ontario, Canada. The idea of offering these conferences came as a result of discussion between researchers in Portugal and Canada to encourage collaboration and exchange, mainly between these two countries, but also with the open participation of other countries, addressing recent advances in theory, methodology and applications.

The response to the call for papers for ICIAR 2004 was very positive. From 316 full papers submitted, 210 were accepted (97 oral presentations, and 113 posters). The review process was carried out by the Program Committee members and other reviewers; all are experts in various image analysis and recognition areas. Each paper was reviewed by at least two reviewing parties. The high quality of the papers in these proceedings is attributed first to the authors, and second to the quality of the reviews provided by the experts. We would like to thank the authors for responding to our call, and we wholeheartedly thank the reviewers for their excellent work in such a short amount of time. We are especially indebted to the Program Committee for their efforts that allowed us to set up this publication.

We were very pleased to be able to include in the conference, Prof. Murat Kunt from the Swiss Federal Institute of Technology, and Prof. Mário Figueiredo, of the Instituto Superior Técnico, in Portugal. These two world-renowned experts were a great addition to the conference and we would like to express our sincere gratitude to each of them for accepting our invitations.

We would also like to thank Prof. Ana Maria Mendonça and Prof. Luís Corte-Real for all their help in organizing this meeting; Khaled Hammouda, the webmaster of the conference, for maintaining the Web pages, interacting with authors and preparing the proceedings; and Gabriela Afonso, for her administrative assistance. We also appreciate the help of the editorial staff from Springer for supporting this publication in the LNCS series.

Finally, we were very pleased to welcome all the participants to this conference. For those who did not attend, we hope this publication provides a brief view into the research presented at the conference, and we look forward to meeting you at the next ICIAR conference, to be held in Toronto, 2005.

ICIAR 2004 – International Conference on Image Analysis and Recognition

General Chair

Aurélio Campilho
University of Porto, Portugal
campilho@fe.up.pt

General Co-chair

Mohamed Kamel
University of Waterloo, Canada
mkamel@uwaterloo.ca

Local Chairs

Ana Maria Mendonça
University of Porto, Portugal
amendon@fe.up.pt

Luís Corte-Real
University of Porto, Portugal
lreal@inescporto.pt

Webmaster

Khaled Hammouda
University of Waterloo, Canada
hammouda@pami.uwaterloo.ca

Supported by

Department of Electrical and Computer Engineering, Faculty of Engineering,
University of Porto, Portugal

INEB – Instituto de Engenharia Biomédica

Pattern Analysis and Machine Intelligence Group, University of Waterloo,
Canada

FCT Fundação para a Ciência e a Tecnologia

MINISTÉRIO DA CIÊNCIA E DO ENSINO SUPERIOR

Advisory and Program Committee

M. Ahmadi	University of Windsor, Canada
M. Ahmed	Wilfrid Laurier University, Canada
A. Amin	University of New South Wales, Australia
O. Basir	University of Waterloo, Canada
J. Bioucas	Technical University of Lisbon, Portugal
M. Cheriet	University of Quebec, Canada
D. Clausi	University of Waterloo, Canada
L. Corte-Real	University of Porto, Portugal
M. El-Sakka	University of Western Ontario, Canada
P. Fieguth	University of Waterloo, Canada
M. Ferretti	University of Pavia, Italy
M. Figueiredo	Technical University of Lisbon, Portugal
A. Fred	Technical University of Lisbon, Portugal
L. Guan	Ryerson University, Canada
E. Hancock	University of York, UK
M. Kunt	Swiss Federal Institute of Technology, Switzerland
E. Jerningan	University of Waterloo, Canada
J. Marques	Technical University of Lisbon, Portugal
A. Mendonça	University of Porto, Portugal
A. Padilha	University of Porto, Portugal
F. Perales	University of the Balearic Islands, Spain
F. Pereira	Technical University of Lisbon, Portugal
A. Pinho	University of Aveiro, Portugal
N. Peres de la Blanca	University of Granada, Spain
P. Pina	Technical University of Lisbon, Portugal
F. Pla	University of Jaume I, Spain
K. Plataniotis	University of Toronto, Canada
T. Rabie	University of Toronto, Canada
P. Scheunders	University of Antwerp, Belgium
M. Sid-Ahmed	University of Windsor, Canada
W. Skarbek	Warsaw University of Technology, Poland
H. Tizhoosh	University of Waterloo, Canada
D. Vandermeulen	Catholic University of Leuven, Belgium
M. Vento	University of Salerno, Italy
R. Ward	University of British Columbia, Canada
D. Zhang	Hong Kong Polytechnic, Hong Kong

Reviewers

M. Abasolo	University of the Balearic Islands, Spain
A. Adegorite	University of Waterloo, Canada
N. Alajlan	University of Waterloo, Canada
H. Araújo	University of Coimbra, Portugal
B. Ávila	Universidade Federal de Pernambuco, Brazil
Z. Azimifar	University of Waterloo, Canada
O. Badawy	University of Waterloo, Canada
J. Batista	University of Coimbra, Portugal
A. Buchowicz	Warsaw University of Technology, Poland
J. Caeiro	Beja Polytechnical Institute, Portugal
L. Chen	University of Waterloo, Canada
G. Corkidi	National University of Mexico, Mexico
M. Correia	University of Porto, Portugal
J. Costeira	Technical University of Lisbon, Portugal
R. Dara	University of Waterloo, Canada
A. Dawoud	University of South Alabama, USA
H. du Buf	University of the Algarve, Portugal
I. El Rube	University of Waterloo, Canada
L. Guan	Ryerson University, Canada
M. Hidalgo	University of the Balearic Islands, Spain
J. Jiang	University of Waterloo, Canada
J. Jorge	Technical University of Lisbon, Portugal
A. Kong	University of Waterloo, Canada
M. Koprnicky	University of Waterloo, Canada
R. Lins	Universidade Federal de Pernambuco, Brazil
W. Mageed	University of Maryland, USA
B. Miners	University of Waterloo, Canada
A. Monteiro	University of Porto, Portugal
J. Orchard	University of Waterloo, Canada
M. Piedade	Technical University of Lisbon, Portugal
J. Pinto	Technical University of Lisbon, Portugal
M. Portells	University of the Balearic Islands, Spain
A. Puga	University of Porto, Portugal
W. Rakowski	Bialystok Technical University, Poland
B. Santos	University of Aveiro, Portugal
J. Santos-Victor	Technical University of Lisbon, Portugal
G. Schaefer	Nottingham Trent University, UK
J. Sequeira	Laboratoire LSIS (UMR CNRS 6168), France
J. Silva	University of Porto, Portugal
J. Sousa	Technical University of Lisbon, Portugal
L. Sousa	Technical University of Lisbon, Portugal
X. Varona	University of the Balearic Islands, Spain
E. Vrscay	University of Waterloo, Canada
S. Wesolkowski	University of Waterloo, Canada
L. Winger	LSI Logic Canada Corporation, Canada

Image Analysis and Recognition

International Conference ICIAR 2004, Porto, Portugal,

September 29 - October 1, 2004, Proceedings, Part II

Campilho, A.; Kamel, M. (Eds.)

2004, LVIII, 868 p., Softcover

ISBN: 978-3-540-23240-7