Lecture Notes in Computer Science 8157

Commenced Publication in 1973
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Image Analysis and Processing – ICIAP 2013

17th International Conference
Naples, Italy, September 9-13, 2013
Proceedings, Part II

Springer

Volume Editor

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Cover illustration: "ICIAP 2013" by Laura Zoé (2013)

ISSN 0302-9743 e-ISSN 1611-3349
ISBN 978-3-642-41183-0 e-ISBN 978-3-642-41184-7
DOI 10.1007/978-3-642-41184-7
Springer Heidelberg New York Dordrecht London

Library of Congress Control Number: 2013948577

CR Subject Classification (1998): I.4, I.5, I.2.10, H.3, F.2, I.3

LNCS Sublibrary: SL 6 – Image Processing, Computer Vision, Pattern Recognition, and Graphics

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Typesetting: Camera-ready by author, data conversion by Scientific Publishing Services, Chennai, India

Printed on acid-free paper

Springer is part of Springer Science+Business Media (www.springer.com)

Preface

The International Conference on Image Analysis and Processing (ICIAP) is an established biennial scientific meeting promoted by the Italian Group of Researchers in Pattern Recognition (GIRPR), which is the Italian IAPR Member Society, and covers topics related to theoretical and experimental areas of image analysis and pattern recognition with emphasis on different applications.

The 17th International Conference on Image Analysis and Processing (ICIAP 2013), held in Naples, Italy, September 9–13, 2013, in the magnificent Castel dell'Ovo, (www.iciap2013-naples.org), was organized by the CVPR Lab of the University of Naples Parthenope (cvprlab.uniparthenope.it).

ICIAP 2013 was endorsed by the International Association for Pattern Recognition (IAPR), the IEEE Computer Society's Technical Committee on Pattern Analysis and Machine Intelligence (TCPAMI), and the IEEE Computational Intelligence Society (CIS).

The central aim of ICIAP 2013 was to highlight connections and synergies of image processing and analysis with pattern recognition and machine learning, human computer systems, biomedical imaging and applications, multimedia interaction and processing, 3D computer vision, and understanding objects and scene, providing to researchers, as well as people from industry, students, and interested newcomers, a forum for discussing current developments and applications. To this aim, Mei Han from Google Inc. USA was invited to give an industrial talk and participate in a panel discussion together with several high-tech companies.

ICIAP 2013 received 354 paper submissions from all over the world, a substantial increase on previous years, including Algeria, Argentina, Austria, Belgium, Brazil, Bulgaria, Canada, China, Colombia, Czech Republic, Denmark, Egypt, Finland, France, Germany, Greece, India, Israel, Italy, Japan, Korea, Marocco, Mexico, Pakistan, Poland, Romania, Russia, Saudi Arabia, Slovak Republic, Spain, Sweden, Switzerland, Tunisia, Turkey, United Kingdom, USA and, Vietnam. To select papers from these submissions, 10 expert researchers were invited to act as areas chairs, together with the International Program Committee and an expert team of reviewers. The rigorous peer-review selection process, carried out by three distinct reviewers and including a rebuttal phase, ultimately led to the selection 162 high-quality manuscripts, with an overall acceptance rate of 45.76%, the lowest in the ICIAP series.

The program included five invited talks by experts in computer vision and pattern recognition, Fei-Fei Li, Stanford University (USA), Jiri Matas, Czech Technical University (Czech Republic), Sankar K. Pal, Indian Statistical Institute (India), Ching Y. Suen, Concordia University (Canada), and Antonio Torralba, Massachusetts Institute of Technology (USA), who covered established approaches, recent results, and directions of future works of different topics like handwriting signature recognition, soft computing in computer vision, scene understanding, and tracking.

ICIAP 2013 also included several tutorials on topics of great relevance with respect to the state of the art: "Bio-Inspired Attention Methods in Computer Vision: Theory, Models and Biological Realities" (John Tsotsos, Canada); "Discrete Optimization in Computer Vision" (Nikos Komodakis and Pawan Kumar, France); "Digital Camera Images: Captured Scene Information vs. Engineered Errors" (Alessandro Rizzi, Italy and John McCann, USA); "Hands on Advanced Bag-of-Words Models for Visual Recognition" (Lamberto Ballan and Lorenzo Seidenari, Italy); "Non-rigid 3D Reconstruction from Images" (Alessio Del Bue, Italy); and "Artificial Consciousness: Theoretical and Empirical Issues" (Riccardo Manzotti, Italy).

ICIAP 2013 also hosted five satellite workshops: "First International Workshop on Assistive Computer Vision and Robotics" (*ACVR*), organized by Marco Leo and Danilo P. Mandic; "Emerging Aspects on Handwritten Signature Processing" (*EAHSP*), organized by Michael Fairhurst, Donato Impedovo, and Giuseppe Pirlo; "Multimedia for Cultural Heritage (*MM4CH*), organized by Costantino Grana, Johan Oomen, and Giuseppe Serra; "Pattern Recognition in Proteomics, Structural Biology, and Bioinformatics (*PR PS BB*), organized by Virginio Cantoni, Michele Ceccarelli, and Robert Murphy; "Social Behaviour Analysis" (*SBA*), organized by Alberto del Bimbo, Pietro Pala, and Maja Pantic. The workshop papers were all collected in a separate volume of the LNCS series by Springer.

Several awards were attributed. Five student support awards were provided by Google USA to cover conference/travel expenses. From a scientific standpoint, the International Association for Pattern Recognition (IAPR) sponsored two IAPR Best Paper awards, while the Caianiello Best Student Award, promoted by GIRPR, was attributed by the CVPR Lab of the University of Naples Parthenope to the best paper presented by a young researcher. All the authors of the awarded papers were invited to submit extended versions of their own papers to a special issue of the Pattern Recognition Letters journal.

The success of ICIAP 2013 is to be credited to the contribution of many people. Special thanks should be given to the area chairs, who did a truly good job. We wish to thank the International Program Committee and the additional Reviewers for the immense amount of hard work and professionalism that has gone into making ICIAP 2013. Our thanks also go to the Organizing Committee for their unstinting advice and support.

I would like to dedicate this book and the entire event to the memory of my great Teacher, Eduardo R. Caianiello. He was one of the most prominent scientists in the field of neural networks, other than quantum field theory, and primarily an inspiring teacher for most researchers in pattern recognition. I always feel that remembrance is the best way to meet a person. I am proud to have met him once again.

Hoping that ICIAP 2013 will serve as an inspiration as we venture towards other frontiers.

September 2013 Alfredo Petrosino

The most typical and distinctive characteristic of the human mind is, in our opinion, its ability to abstract what is 'common' to two, or more, situations or patterns, and to retain of this operation as a new pattern, which is entrusted to the memory as if learnt from the outside.

E.R. Caianiello

(From "Outline of a theory of thought-processes and thinking machines", Journal of Theoretical Biology, 1, 204–235, 1961.)

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Acknowledgments

We acknowledge the support of the Project PT2LOG, National Operational Programme for "Research and Competitiveness" 2007-2013, made available by the Italian Ministry of Education, University and Research (MIUR) and the Ministry of Economic Development (MiSE).

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