

# Preface

The 2017 International Conference on Image Analysis and Processing, ICIAP 2017, was the 19th edition of a series of conferences promoted biennially by the Italian Member Society (GIRPR) of the International Association for Pattern Recognition (IAPR). The conference traditionally covers both classic and the most recent trends in image processing, computer vision, and pattern recognition, addressing both theoretical and applicative aspects.

ICIAP 2017 (<http://www.iciap2017.com>) was held in Catania, during September 11–15, 2017, in the Benedictine Monastery of San Nicolò l’Arena. The monastery is a UNESCO World Heritage Site and today it hosts the Department of Humanities (DISUM) of the University of Catania. The conference was organized by Image Processing Laboratory, Department of Mathematics and Computer Science (DMI) of the University of Catania. Moreover, ICIAP 2017 was endorsed by the International Association for Pattern Recognition (IAPR), the Italian Member Society of IAPR (GIRPR), and received the institutional support of the University of Catania. Notable sponsorship came from several industrial partners such as STMicroelectronics, Micron, and iCTLab.

ICIAP is traditionally a venue for discussing image processing and analysis, pattern recognition, computer vision, and machine learning, from both theoretical and applicative perspectives, promoting connections and synergies among senior scholars and students, universities, research institutes, and companies. ICIAP 2017 followed this trend, and the program was subdivided into eight main topics, covering a broad range of scientific areas, which were managed by two area chairs per each topic. They were: Biomedical and Assistive Technology; Image Analysis, Detection and Recognition; Information Forensics and Security; Imaging for Cultural Heritage and Archaeology; Multimedia; Multiview Geometry and 3D Computer Vision; Pattern Recognition and Machine Learning; Video Analysis and Understanding.

Moreover, we hosted several prominent companies as well as start-ups to show their activities while assessing them with respect to the cutting-edge research in the respective areas.

ICIAP 2017 received 229 paper submissions coming from all over the world, including Australia, Austria, Brazil, Canada, China, Colombia, Cuba, France, Germany, Hungary, Iran, Ireland, Italy, Israel, Japan, Korea, Kuwait, Malaysia, Mexico, Poland, Portugal, Romania, Russia, Saudi Arabia, Serbia, Spain, South Africa, The Netherlands, Tunisia, Turkey, UK, USA. The paper review process was managed by the program chairs with the invaluable support of 15 area chairs, together with the Program Committee and a number of additional reviewers. The peer-review selection process was carried out by three distinct reviewers in most of the cases. This ultimately led to the selection of 138 high-quality manuscripts, 23 oral presentations, and 115 interactive papers/posters, with an overall acceptance rate of about 60%

(about 10% for oral presentations). The ICIAP 2017 proceedings are published as volumes of the *Lecture Notes in Computer Science* (LNCS) series by Springer.

The program also included five invited talks by distinguished scientists in computer vision pattern recognition and image analysis. We enjoyed the plenary lectures of Daniel Cremers, Technische Universität München, Irfan Essa, Georgia Institute of Technology, Fernando Pérez-Gonzalez, University of Vigo, Nicu Sebe, University of Trento, Roberto Scopigno, ISTI-CNR, and Alain Tremeau, University Jean Monnet, who addressed very interesting and recent research approaches and paradigms such as deep learning and semantic scene understanding in computer vision, multimedia forensics, and applications in the field of color retrieval and management and cultural heritage.

While the main conference was held during September 13–15, 2017, ICIAP 2017 also included five tutorials and seven workshops, held on Monday, September 11, and Tuesday, September 12, 2017, on a variety of topics.

The organized tutorials were: “Virtual Cell Imaging (Methods and Principles)” by David Svoboda; “Image Tag Assignment, Refinement, and Retrieval” by Xirong Li, Tiberio Uricchio, Lamberto Ballan, Marco Bertini, Cees Snoek, Alberto Del Bimbo; “Active Vision and Human Robot Collaboration” by Dimitri Ognibene, Fiora Pirri, Guido De Croon, Lucas Paletta, Mario Ceresa, Manuela Chessa, Fabio Solari; “Humans Through the Eyes of a Robot: How Human Social Cognition Could Shape Computer Vision” by Nicoletta Noceti and Alessandra Sciutti.

There was a special session, “Imaging Solutions for Improving the Quality of Life (I-LIFE’17),” organized by Dan Popescu and Loretta Ichim with eight interesting works selected by the organizers.

ICIAP 2017 also hosted seven half- or full-day satellite workshops: the “First International Workshop on Brain-Inspired Computer Vision (WBICV 2017)” organized by George Azzopardi, Laura Fernández-Robles, Antonio Rodríguez-Sánchez; “Third International Workshop on Multimedia Assisted Dietary Management (MADiMa 2017)” organized by Stavroula Mougiakakou, Giovanni Maria Farinella, Keiji Yanai; “Social Signal Processing and Beyond (SSPandBE 2017)” organized by Mariella Dimiccoli, Petia Ivanova Radeva, Marco Cristani; “Natural Human–Computer Interaction and Ecological Perception in Immersive Virtual and Augmented Reality (NIVAR 2017)” organized by Manuela Chessa, Fabio Solari, Jean-Pierre Bresciani; “Automatic Affect Analysis and Synthesis” organized by Nadia Berthouze, Simone Bianco, Giuseppe Boccignone, Paolo Napoletano; “International Workshop on Biometrics As-a-Service: Cloud-Based Technology, Systems, and Applications” organized by Silvio Barra, Arcangelo Castiglione, Kim-Kwang Raymond Choo, Fabio Narducci; “Background Learning for Detection and Tracking from RGBD Videos” organized by Massimo Camplani, Lucia Maddalena, Luis Salgado. The workshop papers were all collected in a separate volume of the LNCS series by Springer.

We thank all the workshop organizers and tutorial speakers who made possible such an interesting pre-conference program.

Several awards were conferred during ICIAP 2017. The “Eduardo Caianiello” Award was attributed to the best paper authored or co-authored by at least one young researcher (PhD student, postdoc, or similar); a Best Paper Award was also assigned after a careful selection made by an ad hoc appointed committee provided by Springer and IAPR.

The organization and the success of ICIAP 2017 were made possible thanks to the cooperation of many people. First of all, special thanks should be given to the area chairs, who made a big effort for the selection of the papers, together with all the members of the Program Committee. Second, we would also like to thank the industrial, special session, publicity, publication, and Asia and US liaison chairs, who, operating in their respective fields, made this event a successful forum of science.

Special thanks go to the workshop and tutorial chairs as well as all workshop organizers and tutorial lecturers for making richer the conference program with notable satellite events. Last but not least, we are indebted to the local Organizing Committee, mainly colleagues from IPLAB, who dealt with almost every aspects of the conference.

Thanks very much indeed to all the aforementioned people, since without their support we would have not made it.

We hope that ICIAP 2017 met its aim to serve as a basis and inspiration for future ICIAP editions.

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