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14th European Conference
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Foreword

Welcome to the proceedings of the 2016 edition of the European Conference on Computer Vision held in Amsterdam! It is safe to say that the European Conference on Computer Vision is one of the top conferences in computer vision. It is good to reiterate the history of the conference to see the broad base the conference has built in its 13 editions. First held in 1990 in Antibes (France), it was followed by subsequent conferences in Santa Margherita Ligure (Italy) in 1992, Stockholm (Sweden) in 1994, Cambridge (UK) in 1996, Freiburg (Germany) in 1998, Dublin (Ireland) in 2000, Copenhagen (Denmark) in 2002, Prague (Czech Republic) in 2004, Graz (Austria) in 2006, Marseille (France) in 2008, Heraklion (Greece) in 2010, Florence (Italy) in 2012, and Zürich (Switzerland) in 2014.

For the 14th edition, many people worked hard to provide attendees with a most warm welcome while enjoying the best science. The Program Committee, Bastian Leibe, Jiri Matas, Nicu Sebe, and Max Welling, did an excellent job. Apart from the scientific program, the workshops were selected and handled by Hervé Jégou and Gang Hua, and the tutorials by Jacob Verbeek and Rita Cucchiara. Thanks for the great job. The coordination with the subsequent ACM Multimedia offered an opportunity to expand the tutorials with an additional invited session, offered by the University of Amsterdam and organized together with the help of ACM Multimedia.

Of the many people who worked hard as local organizers, we would like to single out Martine de Wit of the UvA Conference Office, who delicately and efficiently organized the main body. Also the local organizers Hamdi Dibeklioglu, Efstratios Gavves, Jan van Gemert, Thomas Mensink, and Mihir Jain had their hands full. As a venue, we chose the Royal Theatre Carré located on the canals of the Amstel River in downtown Amsterdam. Space in Amsterdam is sparse, so it was a little tighter than usual. The university lent us their downtown campuses for the tutorials and the workshops. A relatively new thing was the industry and the sponsors for which Ronald Poppe and Peter de With did a great job, while Andy Bagdanov and John Schavemaker arranged the demos. Michael Wilkinson took care to make Yom Kippur as comfortable as possible for those for whom it is an important day. We thank Marc Pollefeys, Alberto del Bimbo, and Virginie Mes for their advice and help behind the scenes. We thank all the anonymous volunteers for their hard and precise work. We also thank our generous sponsors. Their support is an essential part of the program. It is good to see such a level of industrial interest in what our community is doing!

Amsterdam does not need any introduction. Please emerge yourself but do not drown in it, have a nice time.

October 2016

Theo Gevers
Arnold Smeulders

Preface

Welcome to the proceedings of the 2016 European Conference on Computer Vision (ECCV 2016) held in Amsterdam, The Netherlands. We are delighted to present this volume reflecting a strong and exciting program, the result of an extensive review process. In total, we received 1,561 paper submissions. Of these, 81 violated the ECCV submission guidelines or did not pass the plagiarism test and were rejected without review. We employed the iThenticate software (www.ithenticate.com) for plagiarism detection. Of the remaining papers, 415 were accepted (26.6 %): 342 as posters (22.6 %), 45 as spotlights (2.9 %), and 28 as oral presentations (1.8 %). The spotlights – short, five-minute podium presentations – are novel to ECCV and were introduced after their success at the CVPR 2016 conference. All orals and spotlights are presented as posters as well. The selection process was a combined effort of four program co-chairs (PCs), 74 area chairs (ACs), 1,086 Program Committee members, and 77 additional reviewers.

As PCs, we were primarily responsible for the design and execution of the review process. Beyond administrative rejections, we were involved in acceptance decisions only in the very few cases where the ACs were not able to agree on a decision. PCs, as is customary in the field, were not allowed to co-author a submission. General co-chairs and other co-organizers played no role in the review process, were permitted to submit papers, and were treated as any other author.

Acceptance decisions were made by two independent ACs. There were 74 ACs, selected by the PCs according to their technical expertise, experience, and geographical diversity (41 from European, five from Asian, two from Australian, and 26 from North American institutions). The ACs were aided by 1,086 Program Committee members to whom papers were assigned for reviewing. There were 77 additional reviewers, each supervised by a Program Committee member. The Program Committee was selected from committees of previous ECCV, ICCV, and CVPR conferences and was extended on the basis of suggestions from the ACs and the PCs. Having a large pool of Program Committee members for reviewing allowed us to match expertise while bounding reviewer loads. Typically five papers, but never more than eight, were assigned to a Program Committee member. Graduate students had a maximum of four papers to review.

The ECCV 2016 review process was in principle double-blind. Authors did not know reviewer identities, nor the ACs handling their paper(s). However, anonymity becomes difficult to maintain as more and more submissions appear concurrently on arXiv.org. This was not against the ECCV 2016 double submission rules, which followed the practice of other major computer vision conferences in the recent past. The existence of arXiv publications, mostly not peer-reviewed, raises difficult problems with the assessment of unpublished, concurrent, and prior art, content overlap, plagiarism, and self-plagiarism. Moreover, it undermines the anonymity of submissions. We found that not all cases can be covered by a simple set of rules. Almost all controversies during the review process were related to the arXiv issue. Most of the reviewer inquiries were

resolved by giving the benefit of the doubt to ECCV authors. However, the problem will have to be discussed by the community so that consensus is found on how to handle the issues brought by publishing on arXiv.

Particular attention was paid to handling conflicts of interest. Conflicts of interest between ACs, Program Committee members, and papers were identified based on the authorship of ECCV 2016 submissions, on the home institutions, and on previous collaborations of all researchers involved. To find institutional conflicts, all authors, Program Committee members, and ACs were asked to list the Internet domains of their current institutions. To find collaborators, the Researcher.cc database (http://researcher.cc/), funded by the Computer Vision Foundation, was used to find any co-authored papers in the period 2012–2016. We pre-assigned approximately 100 papers to each AC, based on affinity scores from the Toronto Paper Matching System. ACs then bid on these, indicating their level of expertise. Based on these bids, and conflicts of interest, approximately 40 papers were assigned to each AC. The ACs then suggested seven reviewers from the pool of Program Committee members for each paper, in ranked order, from which three were chosen automatically by CMT (Microsofts Academic Conference Management Service), taking load balancing and conflicts of interest into account.

The initial reviewing period was five weeks long, after which reviewers provided reviews with preliminary recommendations. With the generous help of several last-minute reviewers, each paper received three reviews. Submissions with all three reviews suggesting rejection were independently checked by two ACs and if they agreed, the manuscript was rejected at this stage ("early rejects"). In total, 334 manuscripts (22.5 %) were early-rejected, reducing the average AC load to about 30.

Authors of the remaining submissions were then given the opportunity to rebut the reviews, primarily to identify factual errors. Following this, reviewers and ACs discussed papers at length, after which reviewers finalized their reviews and gave a final recommendation to the ACs. Each manuscript was evaluated independently by two ACs who were not aware of each others, identities. In most of the cases, after extensive discussions, the two ACs arrived at a common decision, which was always adhered to by the PCs. In the very few borderline cases where an agreement was not reached, the PCs acted as tie-breakers. Owing to the rapid expansion of the field, which led to an unexpectedly large increase in the number of submissions, the size of the venue became a limiting factor and a hard upper bound on the number of accepted papers had to be imposed. We were able to increase the limit by replacing one oral session by a poster session. Nevertheless, this forced the PCs to reject some borderline papers that could otherwise have been accepted.

We want to thank everyone involved in making the ECCV 2016 possible. First and foremost, the success of ECCV 2016 depended on the quality of papers submitted by the authors, and on the very hard work of the ACs, the Program Committee members, and the additional reviewers. We are particularly grateful to Rene Vidal for his continuous support and sharing experience from organizing ICCV 2015, to Laurent Charlin for the use of the Toronto Paper Matching System, to Ari Kobren for the use of the Researcher.cc tools, to the Computer Vision Foundation (CVF) for facilitating the use of the iThenticate plagiarism detection software, and to Gloria Zen and Radu-Laurentiu Vieriu for setting up CMT and managing the various tools involved. We also owe a debt of gratitude for the support of the Amsterdam local organizers, especially Hamdi Dibeklioglu for keeping the

website always up to date. Finally, the preparation of these proceedings would not have been possible without the diligent effort of the publication chairs, Albert Ali Salah and Robby Tan, and of Anna Kramer from Springer.

October 2016

Bastian Leibe
Jiri Matas
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