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Foreword

The European Conference on Computer Vision is one of the top conferences in computer vision. It was first held in 1990 in Antibes (France) with 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, and Florence (Italy) in 2012. Many people have worked hard to turn the 2014 edition into as great a success. We hope you will find this a mission accomplished.

The chairs decided to adhere to the classic single-track scheme. In terms of the time ordering, we decided to largely follow the Florence example (typically starting with poster sessions, followed by oral sessions), which offers a lot of flexibility to network and is more forgiving for the not-so-early-birds and hard-core gourmets.

A large conference like ECCV requires the help of many. They made sure there was a full program including the main conference, tutorials, workshops, exhibits, demos, proceedings, video streaming/archive, and Web descriptions. We want to cordially thank all those volunteers! Please have a look at the conference website to see their names (http://eccv2014.org/people/). We also thank our generous sponsors. Their support was vital for keeping prices low and enriching the program. And it is good to see such a level of industrial interest in what our community is doing!

We hope you will enjoy the proceedings ECCV 2014.

Also, willkommen in Zürich!

September 2014

Marc Pollefeys
Luc Van Gool
General Chairs

Preface

Welcome to the proceedings of the 2014 European Conference on Computer Vision (ECCV 2014) that was in Zurich, Switzerland. We are delighted to present this volume reflecting a strong and exciting program, the result of an extensive review process. In total, we received 1,444 paper submissions. Of these, 85 violated the ECCV submission guidelines and were rejected without review. Of the remainder, 363 were accepted (26,7%): 325 as posters (23,9%) and 38 as oral presentations (2,8%). This selection process was a combined effort of four program co-chairs (PCs), 53 area chairs (ACs), 803 Program Committee members and 247 additional reviewers.

As PCs we were primarily responsible for the design and execution of the review process. Beyond administrative rejections, we were not directly involved in acceptance decisions. Because the general co-chairs were permitted to submit papers, they played no role in the review process and were treated as any other author.

Acceptance decisions were made by the AC Committee. There were 53 ACs in total, selected by the PCs to provide sufficient technical expertise, geographical diversity (21 from Europe, 7 from Asia, and 25 from North America) and a mix of AC experience (7 had no previous AC experience, 18 had served as AC of a major international vision conference once since 2010, 8 had served twice, 13 had served three times, and 7 had served 4 times).

ACs were aided by 803 Program Committee members to whom papers were assigned for reviewing. There were 247 additional reviewers, each supervised by a Program Committee member. The Program Committee was based on suggestions from ACs, and committees from previous conferences. Google Scholar profiles were collected for all candidate Program Committee members and vetted by PCs. Having a large pool of Program Committee members for reviewing allowed us to match expertise while bounding reviewer loads. No more than nine papers were assigned to any one Program Committee member, with a maximum of six to graduate students.

The ECCV 2014 review process was double blind. Authors did not know the reviewers' identities, nor the ACs handling their paper(s). We did our utmost to ensure that ACs and reviewers did not know authors' identities, even though anonymity becomes difficult to maintain as more and more submissions appear concurrently on arXiv.org.

Particular attention was paid to minimizing potential conflicts of interest. Conflicts of interest between ACs, Program Committee members, and papers were based on authorship of ECCV 2014 submissions, on their home institutions, and on previous collaborations. 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 DBLP (www.dblp.org) database was used to find any co-authored papers in the period 2010–2014.

We initially assigned approximately 100 papers to each AC, based on affinity scores from the Toronto Paper Matching System and authors' AC suggestions. ACs then bid on these, indicating their level of expertise. Based on these bids, and conflicts of interest, approximately 27 papers were assigned to each AC, for which they would act as the primary AC. The primary AC then suggested seven reviewers from the pool of Program Committee members (in rank order) for each paper, from which three were chosen per paper, taking load balancing and conflicts of interest into account.

Many papers were also assigned a secondary AC, either directly by the PCs, or as a consequence of the primary AC requesting the aid of an AC with complementary expertise. Secondary ACs could be assigned at any stage in the process, but in most cases this occurred about two weeks before the final AC meeting. Hence, in addition to their initial load of approximately 27 papers, each AC was asked to handle three to five more papers as a secondary AC; they were expected to read and write a short assessment of such papers. In addition, two of the 53 ACs were not directly assigned papers. Rather, they were available throughout the process to aid other ACs at any stage (e.g., with decisions, evaluating technical issues, additional reviews, etc.).

The initial reviewing period was three weeks long, after which reviewers provided reviews with preliminary recommendations. Three weeks is somewhat shorter than normal, but this did not seem to cause any unusual problems. With the generous help of several last-minute reviewers, each paper received three reviews.

Authors were then given the opportunity to rebut the reviews, primarily to identify any 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. Many ACs requested help from secondary ACs at this time.

Papers, for which rejection was clear and certain, based on the reviews and the AC's assessment, were identified by their primary ACs and vetted by a shadow AC prior to rejection. (These shadow ACs were assigned by the PCs.) All papers with any chance of acceptance were further discussed at the AC meeting. Those deemed "strong" by primary ACs (about 140 in total) were also assigned a secondary AC.

The AC meeting, with all but two of the primary ACs present, took place in Zurich. ACs were divided into 17 triplets for each morning, and a different set of triplets for each afternoon. Given the content of the three (or more) reviews along with reviewer recommendations, rebuttals, online discussions among reviewers and primary ACs, written input from and discussions with secondary ACs, the

AC triplets then worked together to resolve questions, calibrate assessments, and make acceptance decisions.

To select oral presentations, all strong papers, along with any others put forward by triplets (about 155 in total), were then discussed in four panels, each comprising four or five triplets. Each panel ranked these oral candidates, using four categories. Papers in the two top categories provided the final set of 38 oral presentations.

We want to thank everyone involved in making the ECCV 2014 Program possible. First and foremost, the success of ECCV 2014 depended on the quality of papers submitted by authors, and on the very hard work of the reviewers, the Program Committee members and the ACs. We are particularly grateful to Kyros Kutulakos for his enormous software support before and during the AC meeting, to Laurent Charlin for the use of the Toronto Paper Matching System, and Chaohui Wang for help optimizing the assignment of papers to ACs. We also owe a debt of gratitude for the great support of Zurich local organizers, especially Susanne Keller and her team.

September 2014

David Fleet
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