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Scale Space and Variational Methods in Computer Vision

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Preface

The 6th International Conference on Scale Space and Variational Methods in Computer Vision (SSVM 2017, http://ssvm2017.compute.dtu.dk/) was held in the beautiful Danish fjord city of Kolding, eastern Jutland, Denmark. Following the previous meetings, we kept the style of gathering people in a slightly remote and scenic place in order to encourage fruitful discussions during the day and in the evening. This conference, born in 2007 in Ischia, Italy, has become a major event in the communities with common research interests in scale space, variational, geometric, and level set methods and their numerous applications in computer vision and more generally in imaging science. SSVM 2017 was announced in January 2016 and it attracted the attention of an important international scientific audience of authors coming from more than 16 countries. We received 77 double-blind submissions. The papers underwent a peer-review process similar to that of high-level journals in the field: each paper was reviewed by at least three members of the Program Committee as well as by other referees. The reviews and the papers were then considered by the conference chairs. We acknowledge P. Weiss, J. Lellmann, M. Nikolova, and Y. Quéau for their significant review work on manuscripts submitted to the conference. Finally, 55 manuscripts were selected for SSVM 2017. Among them, 24 articles were selected for oral presentation and 31 for poster presentation. All these 12-page-long original articles are contained in this book. A best student paper award was given during the conference. Following the tradition of the previous SSVM conferences, we invited outstanding scientists to give keynote presentations. This year, we were happy to welcome the following invited keynote lectures:

- Christine de Mol (Université Libre de Belgique, Bruxelles, Belgium): "NonNegative Matrix Factorization and Blind Imaging with Positivity"
- Maurizio Falcone (Università di Roma La Sapienza, Roma, Italy): "Recent Developments in the Shape-from-Shading Problem";
- Marco Loog (Delft University of Technology, Delft, The Netherlands): "Scale, Saliency, and Supervised Learning";
- Per Christian Hansen (Technical University of Denmark, Lyngby, Denmark): "ART Performance".

We would like to thank the authors for their contributions and the members of the Program Committee and the additional reviewers for their time and valuable comments during the review process. We are grateful to the organizers of the previous editions of this conference for precious tips on how to organize the event: Fiorella Sgallari (SSVM 2007), Xue-Cheng Tai (SSVM 2009), Yana Katz (SSVM 2011), Arjan Kuijper (SSVM 2013), Jean-François Aujol (SSVM 2015) gave us the most fresh information, as well as Joachim Weickert. Further, we would like to thank Lene Winther Hagelsjær (CAP Partner) and Christen Artagnan Sørensen (University of Copenhagen) for their enthusiastic help in the financial management. Finally, we are lucky to acknowledge

the generous support of the Carsberg Foundation, the Center for Stochastic Geometry and Advanced Bioimaging (CSGB), the Otto Mønsted Fund, the Department of Computer Science, University of Copenhagen, IH Food AS, and Zebicon AS. The manuscripts of all past SSVM editions were published by Springer in the *Lecture Notes in Computer Science* series as well: LNCS 4485 (Ischia, Italy 2007), LNCS 5567 (Voss, Norway 2009), LNCS 6667 (Ein Gedi, Israel 2011), LNCS 7893 (Leibnitz, Austria 2013), and LNCS 9087 (Lège-Cap Ferret, France 2015). It is interesting to observe the evolution of the topics covered by this conference. They naturally reflect the progress of mathematical and application-driven ideas in the field as well as the advent of powerful computers. This is expressed by the interest in more realistic mathematical models, the use of novel mathematical tools for modeling and for scientific computing, the advance in the processing of huge data volumes (e.g., in video and in 3D, especially magnetic resonance and tomographic imaging). These new trends are well represented in this book.

April 2017

François Lauze
Yiqiu Dong
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