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Almerico Murli
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Scale Space and Variational Methods in Computer Vision

First International Conference, SSVM 2007
Ischia, Italy, May/June 2007
Proceedings

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Preface

Image processing, computational vision, robot and machine vision are terms that refer to automatic visual perception through intelligent processing of image content. Such a demand requires the development of appropriate mathematical models which reformulate the answer to the perception problem as the lowest potential of a specifically designed objective function. The development of such models capable of reproducing human vision is a long-shot objective in the domain. Variational methods are a very popular selection for addressing a number of components of visual perception, while scale space methods introduce the notion of hierarchical representation of image content or property often present in biological autonomous perception organisms. This development has been made possible by two factors: first, the advent of computers powerful enough to cope with the large dimensionality of the image data and the complexity of the algorithms that operate on them (Teraflop, Terabyte); second, the availability of new models, methods and algorithms, thanks to many excellent mathematicians, computing scientists and engineers from all over the world.

The 1st International Conference on Scale Space and Variational Methods in Computer Vision (SSVM 2007) was an attempt to bring together two different communities with adjacent research interests, the one of scale-space analysis and the one of variational, geometric and level sets (VLSM). This conference was the joint edition of the 4th VLSM and 6th Scale Space with the aim of bringing together various disciplines working in the area of visual perception (mathematicians, physicists, computing scientists, etc.). It gathered the attention of an important international scientific crowd with submissions and presentations from approximately 26 countries (Austria, Australia, Belgium, Canada, Switzerland, China, Germany, Denmark, Spain, France, Greece, Honk Kong, Israel, India, Ireland, Italy, Japan, Korea, Mexico, The Netherlands, Norway, Poland, Sweden, Turkey, England, USA) from leading scientists in the field

We received 133 high-quality full-paper double-blind submissions. Each paper was reviewed by at least three members of the Program Committee. These reviews were considered from the Area Chairs, who finally proposed 79 to be accepted. We selected 24 manuscripts for oral presentation and 55 for poster presentation. Both oral and poster papers were attributed the same length of pages in the conference proceedings.

Furthermore, we invited keynote speakers who could provide valuable additional inspiration beyond the mainstream topics in scale-space analysis and variational methods. It was our pleasure to welcome Franco Brezzi of the University of Pavia, Institute for Advanced Study and IMATI-CNR (Italy), Emmanuel Candes of California Institute of Technology (USA), and Peter Schröder of California Institute of Technology (USA), as keynote speakers.

We would like to thank the authors for their contributions and the members of the Program Committee for their time and valuable comments during the review process. We would also like to acknowledge the support of Christian Trocchi for his help with the Website and Daniela Casaburi and Livia Marcellino for their help with the organization. Last but not least, special thanks to Francesca Incensi for handling the submission/review/decisions and proceedings aspects of the conference. Finally, we are grateful to the University of Bologna, the University of Naples Federico II, GNCS-INDAM, CINECA Bologna and CIRAM (Research Centre of Applied Mathematics) Bologna for their sponsorship.

It is our belief that this conference will become a reference in the domain, and will contribute on the development of new ideas in the area of visual perception through processing images with mathematical models.

May-June 2007

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