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Computational Modeling of Objects Presented in Images

Fundamentals, Methods, and Applications

5th International Symposium, CompIMAGE 2016
Niagara Falls, NY, USA, September 21–23, 2016
Revised Selected Papers

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Preface

It is indeed our great pleasure to welcome you to the proceedings of the 5th International Symposium on Computational Modeling of Objects Represented in Images. Fundamentals, Methods and Applications (CompIMAGE 2016), which took place at the Conference and Event Center in Niagara Falls, NY, USA. The previous editions were held in Coimbra (Portugal, 2006), Buffalo, NY (USA, 2010), Rome (Italy, 2012), and Pittsburg, PA (USA, 2014).

The purpose of the symposium is to provide a common forum for researchers, scientists, engineers, and practitioners around the world to present their latest research findings, ideas, developments, and applications in the area of computational modeling of objects presented in images. CompIMAGE 2016 attracted scientists who use various approaches to solve problems that appear in a wide range of areas – as diverse as medicine, robotics, defense, security, material science, and manufacturing. Traditionally, CompIMAGE symposia have been truly international, and this one was not an exception: Symposium participants came from 13 different countries from three continents.

The screening and publication process of CompIMAGE 2016 was in a different format than the previous editions of the symposium. In response to the call for papers, we received not only full-length articles but short communications as well. The page length of the latter was suggested to not exceed four pages. The authors of the accepted short communications had the possibility to present at the symposium and receive feedback for their work. After the symposium, they were given time to extend their papers to full-length articles and submit them for possible inclusion in the symposium proceedings.

All submissions underwent a rigorous double-blind review process by members of the international Program Committee. The most important selection criterion for acceptance or rejection of a paper was the overall score received. Other criteria were: relevance to the symposium topics, correctness, originality, mathematical depth, clarity, and presentation quality.

As a result, 18 contributed papers were selected to be included in this volume, as well as a comprehensive survey on case-based reasoning for signal and image analysis, based on the keynote talk of Petra Perner. We hope that the works are of interest to a broad readership.

We would like to thank all those who contributed to the success of the symposium. First, we would like to express our gratitude to all authors who submitted their works to CompIMAGE 2016. Thanks to their contributions, we succeeded in having a technical program of high scientific quality. Our most sincere thanks go to the Program Committee members whose cooperation in carrying out a rigorous and objective review process was essential in establishing a strong symposium program and high-quality publications. We express our sincere gratitude to the invited speakers Donald P. Greenberg (Cornell University, USA), Jiebo Luo (University of Rochester, USA), Petra Perner (Institute of

Computer Vision and Applied Computer Sciences, Germany), and Kamen Kanev (University of Shizuoka, Japan) for their remarkable presentations and overall contribution to the symposium.

Special thanks go to Mark W. Severson, Dean of the School of Natural and Social Sciences at SUNY Buffalo State, for funding the best paper awards and the gifts for the keynote speakers. We are grateful to our partners SUNY Buffalo State, State University of New York at Fredonia, FEUP – Faculdade de Engenharia da Universidade do Porto, APMTAC – Associação Portuguesa de Mecânica Teórica, Aplicada e Computacional, FCT – Fundação para a Ciência e a Tecnologia, and INEGI – Instituto de Ciência e Inovação em Engenharia Mecânica e Engenharia Industrial. We also thank the personnel of the Conference and Event Center at Niagara Falls, and especially Tom Acara and Alexis Schmitz, for the excellent conditions and service during the workshop. Finally, we wish to thank Springer for the pleasant cooperation in the production of this volume.

December 2016

Reneta P. Barneva
Valentin E. Brimkov
João Manuel R.S. Tavares

Organization

The 5th International Symposium on Computational Modeling of Objects Represented in Images: Fundamentals, Methods, and Applications, CompIMAGE 2016 was held in Niagara Falls, NY, USA, September 21–23, 2016.

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