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Biomedical Image Registration

8th International Workshop, WBIR 2018 Leiden, The Netherlands, June 28–29, 2018 Proceedings

Springer

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Preface

The 8th International Workshop on Biomedical Image Registration (WBIR 2018, https://wbir2018.nl) was held in Leiden, The Netherlands, June 28–29, 2018. The workshop brought together leading researchers in the area of biomedical image registration to present and discuss recent developments and methodology in the field. WBIR 2018 was jointly organized by the image registration groups from Erasmus MC, Rotterdam, and LUMC, Leiden. The workshop included both oral and poster presentations in a single track, two keynote lectures, an image registration challenge, a post-conference hackathon, and ample opportunities for discussion.

Preceding editions of WBIR have been running mostly standalone as a 2-day workshop, alternating between U.S. and European locations: Bled, Slovenia (1999); Philadelphia, USA (2003); Utrecht, The Netherlands (2006); Lübeck, Germany (2010); Nashville, USA (2012); London, UK (2014); and Las Vegas, USA (2016).

The WBIR 2018 proceedings, published in the *Lecture Notes in Computer Science*, were established through a rigorous peer-review process in a double-blind fashion by at least three members of the Program Committee. The international Program Committee consisted of 31 senior scientists in the field of medical image registration. From a total of 17 submissions, 11 were selected for oral or poster presentation. This year, three papers were on the topic of sliding motion, three on groupwise image registration, one on acceleration, and four on applications and evaluation. New to WBIR, this year we invited 1-page abstract submissions in addition to full-paper submissions. This gave scientists the opportunity to present early work and to get feedback from conference attendees on recently published or submitted journal papers not presented previously. A total of 16 abstracts were submitted, which do not appear in the proceedings, but were presented at the conference.

Three excellent keynote speakers enriched the program. Prof. Dr. Jan-Jakob Sonke spoke about the utilization of image registration in the context of adaptive radiation therapy. Prof. Dr. Max Welling spoke about graph neural networks and related attention mechanisms for use in medical imaging. Prof. Dr. Julia Schnabel postulated that our field is currently finding itself at the cross-roads under the thought-provoking title “Is image registration a solved problem?”. The program incorporated presentation of the design and results of the Continuous Registration Challenge, a new idea for benchmarking medical image registration algorithms. A post-conference hackathon, organized in collaboration with the Insight Toolkit (ITK) community and Kitware (Matt McCormick), greatly stimulated the implementation of ideas emerging from the workshop and enabled integration of new registration methods in the challenge.

Many contributed to the success of WBIR 2018. In particular, we would like to thank the members of the Program Committee for their work that assures the high

quality of the workshop. Dr. Oleh Dzyubachyk is acknowledged as the proceedings editor, and Sahar Yousefi, MSc, as the webmaster. We also thank Inria, Quantib and the Netherlands Organisation for Scientific Research (NWO) for their financial support, and the MICCAI Society for their endorsement. Finally, we would like to thank all participants of WBIR 2018 for their contributions and discussions. We hope you had a great time in Leiden!

June 2018

Stefan Klein
Marius Staring
Stanley Durrleman
Stefan Sommer

Organization

WBIR 2018 was jointly organized by the image registration groups from Erasmus MC, Rotterdam, and LUMC, Leiden.

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