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Biomedical Image Registration

5th International Workshop, WBIR 2012
Nashville, TN, USA, July 7-8, 2012
Proceedings

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Preface

The 5th Workshop on Biomedical Image Registration (WBIR) was held on the Vanderbilt University campus in Nashville, Tennessee, USA. It followed a series of workshops that were held in Bled, Slovenia (1999), in Philadelphia, USA (2003), in Utrecht, The Netherlands (2006), and in Lübeck, Germany (2010).

This workshop series brings together researchers involved in developing new registration methods and users of these methods. Papers submitted to the workshop were reviewed blindly by three members of the workshop's international Program Committee. This year, 44 papers were submitted, 20 papers were accepted for oral presentation and 11 papers were accepted for poster presentation. All papers presented at the workshop are published in this volume. The program clearly shows that medical image registration is a vibrant research area. Papers were submitted by researchers from many parts of the world and address fundamental algorithmic issues as well as issues related to the translation of these algorithms to the medical imaging community at large. The keynote speakers also discussed a spectrum of topics. Dr. J. Michael Fitzpatrick presented a historical overview covering more than 20 years of theoretical developments aiming at elucidating the relation between target registration error (TRE), fiducial registration error (FRE), and fiducial localization error (FLE). Dr. John Gore, Director of the Vanderbilt Institute of Imaging Science, discussed registration needs and challenges in large imaging institutes involved in small animal and human imaging research. Dr. Nassir Navab discussed registration needs and challenges to support research in the area of computer-assisted procedures.

We are grateful to those who contributed to the success of WBIR 2012. In particular, we would like to thank the organization staff and members of the Program Committee for their work. We also thank Medtronic Surgical Technologies, the Vanderbilt Initiative for Surgery and Engineering, and NDI (Northern Digital Inc.) for their generous support. Last but not least, we thank all the participants of this workshop for their contributions to the many discussions. We hope they found the workshop stimulating and enjoyed Nashville and the Vanderbilt Campus. For those who could not attend the workshop, we hope that this volume will provide you with valuable information and that you will be able to participate to the next WBIR workshop.

July 2012

Benoît M. Dawant
Gary E. Christensen
J. Michael Fitzpatrick
Daniel Rueckert

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