

Preface

The Sixth International Workshop on Abdominal Imaging: Computational and Clinical Applications, was held in conjunction with the 17th International Conference on Medical Image Computing and Computer-Assisted Intervention (MICCAI) on September 14, 2014, at the Massachusetts Institute of Technology, Cambridge, USA.

In the abdomen, the appearances of organs and diseases are complex and subtle, and thus the development of computational models that are useful in clinical practice is highly challenging. Nevertheless, diagnosis often relies on the quantitative measurement of organs and lesions, because their volumes and shapes are strong indicators of disorders. Given the complexity and high variability of abdominal organs, the identification of distinct computational challenges for integrative models of organs and abnormalities is essential for understanding anatomy and disease, evaluating treatment, and planning intervention.

Leveraging the success of the previous workshops, the Sixth International Workshop on Abdominal Imaging aimed to provide a comprehensive forum for reviewing clinical opportunities in computational abdominal imaging and for sharing emerging state-of-the-art techniques for solving computationally challenging image analysis and visualization problems, by bringing together leading researchers and clinician-scientists from around the world.

In response to a call for papers, a total of 33 papers were initially submitted to the workshop from 10 countries. These papers underwent a two-tier review process. The first tier was a double-blinded scientific peer-review, in which each paper was reviewed by a minimum of two and in most cases by three expert reviewers from the Scientific Review Committee and the Workshop Committee. Based on the results of this initial review, 30 papers were moved forward to the second tier, in which these papers were revised by incorporating the reviewers' initial comments and were re-reviewed by the Workshop Committee for final acceptance. As a result, 28 papers were accepted to be published in the proceedings volume.

The Outstanding Paper Award was established for recognizing outstanding scientific work and clinical applications presented at the workshop. From the papers that earned an average score of 1–3 in the above first-tier review, the Award Committee, which consisted of at least three members from the Workshop Committee, selected an awarding paper from the candidate papers based on scientific merit and clinical innovation of the paper. As a result, the below paper was selected for receiving the award, and an award certificate was presented to the first author at the opening session of the workshop: Parameter Estimation for Personalization of Liver Tumor Radiofrequency Ablation by Chloé Audigier, Tommaso Mansi, Hervé Delingette, Saikiran Rapaka, Viorel Mihalef, Daniel Carnegie, Emad Boctor, Michael Choti, Ali Kamen, Dorin Comaniciu, and Nicholas Ayache.

To provide past and future perspectives of the research topics described in the accepted papers, three plenary lectures were presented at the workshop: (1) recent advances in liver ablation and needle biopsy by Dr. Aaron Fenster from Robarts Research Institute and University of Western Ontario; (2) the role of CT/MRI perfusion as imaging biomarkers for tumor response evaluation and prediction of survival by Dr. Dushyant Sahani from Massachusetts General Hospital and Harvard Medical School; and (3) MR enterography for severity assessment in Crohn's disease: imaging end-points in clinical trials and inflammatory bowel disease practice by Dr. Joel G. Fletcher from Mayo Clinic.

As a result of all the above activities, the full-day workshop successfully provided a forum among participants for in-depth and interactive discussions of state-of-the-art research and technologies, exchange of emerging ideas, initiation of collaborations, and the exploration of new clinical applications for diagnostic and interventional procedures in abdominal imaging.

We would like to express our sincere appreciation to the authors whose contributions to this proceedings book have required considerable commitment of time and effort. We also thank the members of the Scientific Review Committee for their excellent work in reviewing the submitted manuscripts on a tight schedule, and the members of the Editorial Board for their outstanding job in compiling the papers in this proceedings volume.

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