

Preface

The 6th International Workshop on Machine Learning in Medical Imaging (MLMI 2015) was held in the Holiday Inn Hotel, Munich City Centre, and the Klinikum rechts der Isar, University Hospital of Technische Universität München at Max-Weber-Platz, Munich, Germany, on October 5, 2015, in conjunction with the 18th International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI).

Machine learning plays an essential role in the medical imaging field, including computer-assisted diagnosis, image segmentation, image registration, image fusion, image-guided therapy, image annotation, and image database retrieval. With advances in medical imaging, new imaging modalities and methodologies are developed, such as cone-beam computed tomography, tomosynthesis, electrical impedance tomography, and new machine learning algorithms/applications. Owing to large inter-subject variations and complexities, it is generally difficult to derive analytic formulations or simple equations to represent objects such as lesions and anatomy in medical images. Therefore, tasks in medical imaging require learning from patient data for heuristics and from prior knowledge, in order to facilitate the detection/diagnosis of abnormalities in medical images.

The main aim of the MLMI 2015 workshop was to help advance scientific research within the broad field of machine learning in medical imaging. This workshop focuses on major trends and challenges in this area, and presents works aimed at identifying new cutting-edge techniques and their use in medical imaging. We hope that the MLMI workshop becomes an important platform for translating research from the bench to the bedside.

The range and level of submissions for this year's meeting were of very high quality. Authors were asked to submit full-length papers for review. A total of 69 papers were submitted to the workshop in response to the call for papers. Each of the 69 papers underwent a rigorous double-blind peer-review process, with each paper being reviewed by at least two (typically three) reviewers from the Program Committee, composed of 51 well-known experts in the field. Based on the reviewing scores and critiques, the 40 best papers (58%) were accepted for presentation at the workshop and chosen to be included in this LNCS volume published by Springer. The large variety of machine-learning techniques applied to medical imaging were well represented at the workshop.

We are grateful to the Program Committee for reviewing the submitted papers and giving constructive comments and critiques, to the authors for submitting high-quality papers, to the presenters for their excellent presentations, and to all the MLMI 2015 attendees coming to Munich from all around the world.

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