Preface

The 8th International Workshop on Machine Learning in Medical Imaging (MLMI 2017) was held in the Quebec City Convention Centre, Quebec, Canada on September 10, 2017, in conjunction with the 20th 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. Advances in medical imaging bring about new imaging modalities and methodologies, and new machine learning algorithms/applications. Due 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 prior knowledge, in order to facilitate the detection/diagnosis of abnormalities in medical images.

The main aim of this MLMI 2017 workshop is 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 to identify 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 63 papers were submitted to the workshop in response to the call for papers. Each of the 63 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 68 well-known experts in the field. Based on the reviewing scores and critiques, the 44 best papers (69%) were accepted for presentation at the workshop and chosen to be included in this Springer LNCS volume. 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 excellent presentations, and to all the MLMI 2017 attendees coming to Quebec City from all around the world.

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