

## Preface

The 7th International Conference on Medical Imaging and Augmented Reality, MIAR 2016, was held at the University of Bern, Bern, Switzerland during August 24–26, 2016.

The aim of MIAR 2016 was to bring together researchers in computer vision, graphics, robotics, and medical imaging to present the state-of-the-art developments in this ever-growing research area. We also encouraged a broad interpretation of the field: from macroscopic to molecular imaging, passing the information on to scientists and engineers to develop breakthrough therapeutics, diagnostics, and medical devices, which can then be seamlessly delivered back to patients.

Rapid technical advances in medical imaging, including its growing applications to drug, gene therapy, and invasive/interventional procedures, as well as a fusional development of the protein science, imaging modalities, and nano-technological devices, have attracted significant interest in recent years. This is motivated by the clinical and basic science research requirement of obtaining more detailed physiological and pathological information of the body for establishing the localized genesis and progression of diseases. Current research is also motivated by the fact that medical imaging is increasingly moving from a primarily diagnostic modality toward a therapeutic and interventional aid, driven by streamlining the diagnostic and therapeutic processes for human diseases by means of imaging modalities and robotic-assisted surgery.

The impact of MIAR on these fields was reflected by the quality of submitted papers. This year we received 55 full submissions, which were subsequently reviewed by up to three reviewers, selected from the international Organizing Committee. Every review was assessed and ranked by up to three members of the Program Committee to ensure that the reviews were fair, independent, and consistent. The MIAR 2016 Program Committee finally accepted 39 full papers. The meeting consisted of a single track of oral/poster presentations, with each session led by an invited lecture from our distinguished local and international faculty.

Running such a conference requires dedication, and we appreciated the commitment of the MIAR 2016 Program Committee and the MIAR 2016 international Organizing Committee who worked hard in putting together this conference. We were grateful to everyone who participated in the review process; they donated a large amount of time and effort to make this volume possible and insure a high level of quality. We thank the invited speakers: Terry Peters from the University of Western Ontario, Canada, Brad Nelson and Luc van Gool from ETH Zurich, Switzerland, and Dinggang Shen from the University of North Carolina at Chapel Hill (UNC-CH), USA.

It was our great pleasure to welcome this year's MIAR attendees to Bern, the capital of Switzerland, whose old town is a UNESCO World Heritage Site, featured by its six kilometers of arcades — probably the longest weather-sheltered shopping promenades in Europe. Bern is an ideal place for exploring history and culture and for natural

beauty. The medieval atmosphere of the city with its many fountains, sandstone facades, narrow streets, and historic towers is unique. The elevated Rose Garden above the Bear Park and the platform of the 101-meter-high cathedral tower offer the best views of the old town around which the River Aare flows. The boutiques, bars, and cabaret stages of the old town, some of which are located in vaulted cellars, and the small street cafes are also a highlight for the attendees.

For those who were unable to attend, we hope that this volume will act as a valuable reference to the MIAR disciplines, and we look forward to meeting you at future MIAR conferences.

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