

Preface MCV 2016

The MICCAI 2016 Workshop on Medical Computer Vision: Algorithms for Big Data (MCV 2016) was held in conjunction with the 19th International Conference on Medical Image Computing and Computer-Assisted Intervention (MICCAI 2016) on October 21, 2016, in Athens, Greece. It succeeded the workshops on Medical Computer Vision that were held in September 2010 in conjunction with MICCAI 2010 in Beijing, in June 2012 in conjunction with CVPR 2012 in Providence, in October 2012 in conjunction with MICCAI 2012 in Nice, in September 2013 in conjunction with MICCAI 2013 in Nagoya, in September 2014 in conjunction with MICCAI 2014 in Boston, and in June 2015 in conjunction with CVPR 2015 in Boston.

Modern learning algorithms make the promise of bridging the semantic gap between images and diagnoses and even reaching superhuman performance. The goal of this workshop is to explore the use of “big data” algorithms for harvesting, organizing and learning from large-scale medical imaging data sets and for general-purpose automatic understanding of medical images. This includes modern, scalable, and efficient algorithms for automatic localization, segmentation, registration, and characterization of anatomical features and anomalies. We are especially interested in new methodology strongly motivated by a clinical application with a contribution at the interface of big data algorithms, computer vision, machine learning, and medical image analysis.

Our call for papers resulted in 15 submissions of up to 12 pages. Each paper received two to four reviews. Based on these peer reviews, we accepted 13 papers to the workshop among which six were assigned a long and seven a short oral presentation.

Six invited speakers (Wiro Niessen, Kevin Zhou, Geert Litjens, Mert Sabuncu, Sandy Wells, Ben Glocker) also made major contributions to the program. The many questions and discussions showed the quality of the talks and the posters. Particularly the use of large data sets was much discussed, something that is not easy to obtain with annotations in the medical field. The large participation reflected the interest of the public in the workshop topics.

October 2016

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Preface BAMBI 2016

BAMBI 2016 was the Third International Workshop on Bayesian and Graphical Models for Biomedical Imaging. It was held at the Intercontinental Athenaeum, Arcade I, Athens, Greece, on October 21, 2016. The goal of this event was to highlight the potential of using Bayesian or random field graphical models for advancing scientific research in biomedical image analysis. The BAMBI 2016 proceedings, published in the *Lecture Notes in Computer Science* series together with the Medical Computer Vision workshop, contain state-of-the-art original and highly methodological research selected through a rigorous peer-review process. Every full paper went through a double-blind review process by at least three members of the international Program Committee composed of several renowned scientists in the field of Bayesian image analysis. The result of this stringent selection process was a set of six articles in a single-track single-day event.

The scientific program was augmented by our two invited speakers, Mark Jenkinson (Nuffield Department of Clinical Neurosciences, Oxford University, Oxford, UK) and Ben Glocker (Imperial College London, London, UK). Both presented exciting advances during their keynote lectures, covering a large scope of methodologies and applications in Bayesian and graphical models. We warmly thank the members of our Program Committee and all the participants of the event who made this workshop an exciting venue to share the latest methodological advances in this expanding research area.

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Medical Computer Vision and Bayesian and Graphical
Models for Biomedical Imaging

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Papers

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