Abstract:

OBJECTIVES: Medical image computing has become a key technology in high-tech applications in medicine. Nowadays, medical image computing techniques are applied in daily routine in various medical disciplines. However, further developments are needed to improve computer-aided diagnoses and computer-assisted therapy planning and performance in the future. In this issue selected contributions of the German Conference on Medical Image Processing (BVM) are assembled to present latest advances in the field of medical image computing. METHODS: The winners of scientific awards of the German Conferences on Medical Image Processing (BVM) 2005 and 2006 were invited to submit a manuscript on their latest developments and results for possible publication in Methods of Information in Medicine. Finally, eleven excellent papers were selected to describe important aspects of recent advances in the field of medical image computing. RESULTS: The selected papers give an impression of the broad range and heterogeneity of new developments in the field of medical image computing. New methods for improved image reconstruction, image segmentation, modelling of organs, as well as methodical improvements of non-linear image registration algorithms are presented together with applications of image analysis methods in different medical disciplines. CONCLUSIONS: The selected articles describe different aspects of the intense development in
medical image computing. The image computing methods presented enable new insights into the patient's image data and have the future potential to improve medical diagnostics and patient treatment.