

Future Challenges of Medical Image Computing

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The last decade has seen an enormous increase in medical image computing research and development and this trend continues to gain further speed, driven by the vast amount of multimodal medical image data but also by the broad spectrum of computer assisted applications. At the same time, user expectations with respect to diagnostic accuracy, robustness, speed, automation, workflow efficiency, broad availability, as well as ease of use have reached a high level already. It appears that generic solutions will hardly exist and that software development and optimization will continue to be highly application specific. More recently, cloud computing has entered the field of medical imaging, providing means for more flexible workflows including the support of mobile devices and even a medical imaging equivalent of the App Store paradigm. We discuss current and emerging challenges of medical image computing both from a methodological and from a technological perspective.