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ISBN	3-319-46630-5
Edizione	[1st ed. 2016.]
Descrizione fisica	1 online resource (X, 178 p. 75 illus.)
Collana	Image Processing, Computer Vision, Pattern Recognition, and Graphics ; ; 9968
Disciplina	616.0754
Soggetti	Optical data processing Computer simulation Pattern recognition Computer graphics Artificial intelligence Algorithms Image Processing and Computer Vision Simulation and Modeling Pattern Recognition Computer Graphics Artificial Intelligence Algorithm Analysis and Problem Complexity
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.
Nota di contenuto	Fundamental methods for image-based biophysical modeling and image synthesis -- Biophysical and data-driven models of disease progression or organ development -- Biophysical and data-driven models of organ motion and deformation -- Biophysical and data-driven models of image formation and acquisition -- Segmentation/registration across or within modalities to aid the learning of model parameters -- Cross modality (PET/MR, PET/CT, CT/MR, etc.) image synthesis -- Simulation and synthesis from large-

scale image databases -- Automated techniques for quality assessment of simulations and synthetic images -- Image registration and segmentation -- Image denoising and information fusion -- Image reconstruction from sparse data or sparse views -- Real-time simulation of biophysical properties -- Simulation based approaches for medical imaging -- Synthesis and its applications in computational medical imaging.

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## Sommario/riassunto

This book constitutes the refereed proceedings of the First International Workshop on Simulation and Synthesis in Medical Imaging, held in conjunction with MICCAI 2016, in Athens, Greece, in October 2016. The 17 revised full papers presented together in this book were carefully reviewed and selected from 21 submissions. The contributions span the following broad categories: fundamental methods for image-based biophysical modeling and image synthesis; biophysical and data-driven models of disease progression or organ development; biophysical and data-driven models of organ motion and deformation; biophysical and data-driven models of image formation and acquisition; segmentation/registration across or within modalities to aid the learning of model parameters; cross modality (PET/MR, PET/CT, CT/MR, etc.) image synthesis; simulation and synthesis from large-scale image databases; automated techniques for quality assessment of simulations and synthetic images; as well as several applications of image synthesis and simulation in medical imaging such as image registration and segmentation; image denoising and information fusion; image reconstruction from sparse data or sparse views; and real-time simulation of biophysical properties. The papers were divided into two general topics named “simulation based approaches for medical imaging” and “synthesis and its applications in computational medical imaging”.

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