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## Sommario/riassunto

This book contains thirteen contributions from invited experts of international recognition addressing important issues in shape analysis in medical image analysis, including techniques for image segmentation, registration, modelling and classification, and applications in biology, as well as in cardiac, brain, spine, chest, lung and clinical practice. This volume treats topics such as, anatomic and functional shape representation and matching; shape-based medical image segmentation; shape registration; statistical shape analysis; shape deformation; shape-based abnormity detection; shape tracking and longitudinal shape analysis; machine learning for shape modeling and analysis; shape-based computer-aided-diagnosis; shape-based medical navigation; benchmark and validation of shape representation, analysis and modeling algorithms. This work will be of interest to researchers, students, and manufacturers in the fields of artificial intelligence, bioengineering, biomechanics, computational mechanics, computational vision, computer sciences, human motion, mathematics, medical imaging, medicine, pattern recognition and physics. .