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Soggetti	Optical data processing Artificial intelligence Bioinformatics Computational biology Image Processing and Computer Vision Artificial Intelligence Computer Appl. in Life Sciences
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Nota di contenuto	A feature space for derivatives of deformations -- Non-rigid motion analysis in medical images: a physically based approach -- The use of active shape models for locating structures in medical images -- Parameterized feasible boundaries in gradient vector fields -- Multi-resolution stochastic 3D shape models for image segmentation -- Higher order differential structure of images -- Symbolic description of 3-D structures applied to cerebral vessel tree obtained from MR angiography volume data -- Multiscale Medial analysis of medical images -- Arrangement: A spatial relation comparing part embeddings and its use in medical image comparisons -- Characterizing first and second-order patches using geometry-limited diffusion -- Spatial knowledge representation for visualization of human anatomy and function -- A strategy for automated multimodality image registration incorporating anatomical knowledge and imager characteristics --

Model-based Recognition of anatomical objects from medical images -- A multiscale approach to image segmentation using Kohonen networks -- Segmentation of Magnetic resonance brain images using analog constraint satisfaction neural networks -- Fast, non-linear inversion for Electrical Impedance Tomography -- Inverse methods for Optical Tomography -- Feature-guided acquisition and reconstruction of MR images -- Reconstruction of a three-dimensional volume from a motion-corrupted two-dimensional data set in magnetic resonance imaging -- A framework for incorporating structural prior information into the estimation of medical images -- Bayesian reconstruction for emission tomography via deterministic annealing -- Analytical considerations of photon attenuation and system response function in SPECT reconstruction -- MAP image reconstruction using wavelet decomposition -- Tomographic reconstruction using information-weighted spline smoothing -- A 3-D filtered-backprojection reconstruction algorithm for combined parallel- and cone-beam SPECT data -- Foundations of factor analysis of medical image sequences: A unified approach and some practical implications -- Bayesian identification of a physiological model in dynamic scintigraphic data -- Image registration for the investigation of atherosclerotic plaque movement -- Using statistical pattern recognition techniques to control variable conductance diffusion -- Adaptive noise equalization and image analysis in mammography -- Continuous voxel classification by stochastic relaxation: Theory and application to MR imaging and MR angiography -- Multivariate gaussian pattern classification: Effects of finite sample size and the addition of correlated or noisy features on summary measures of goodness -- Measuring detection and localization performance -- Methods for estimating the efficiency of human and computational observers in ultrasonography -- Gabor function based medical image compression.

Sommario/riassunto

This volume contains the proceedings of the thirteenth biennial International Conference on Information Processing in Medical Imaging (IPMI XIII), held on the campus of Northern Arizona University in Flagstaff, Arizona, in June 1993. This conference was the latest in a series of meetings where new developments in the acquisition, analysis and utilization of medical images are presented, discussed, dissected, and extended. Today IPMI is widely recognized as a preeminent international forum for presentation of cutting-edge research in medical imaging and imageanalysis. The volume contains the text of the papers presented orally atIPMI XIII. Over 100 manuscripts were submitted and critically reviewed, of which 35 were selected for presentation. In this volume they are arranged into nine categories: shape description with deformable models, abstractshape description, knowledge-based systems, neural networks, novel imaging methods, tomographic reconstruction, image sequences, statistical pattern recognition, and image quality.