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| Disciplina | 006.3/7 |
| Soggetti | Optical data processing<br>Signal processing<br>Image processing<br>Speech processing systems<br>Pattern recognition<br>Computer graphics<br>Image Processing and Computer Vision<br>Signal, Image and Speech Processing<br>Pattern Recognition<br>Computer Graphics |
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| Nota di contenuto | A review of nonlinear diffusion filtering -- Scale space versus topographic map for natural images -- On generalized entropies and scale-space -- On the duality of scalar and density flows -- Invertible orientation bundles on 2D scalar images -- Generating stable structure using Scale-space analysis with non-uniform Gaussian kernels -- Generic events for the gradient squared with application to multi-scale segmentation -- Linear spatio-temporal scale-space -- On the handling of spatial and temporal scales in feature tracking -- Following feature lines across scale -- A multi-scale line filter with automatic scale selection based on the Hessian matrix for medical image segmentation -- Supervised diffusion parameter selection for filtering |

SPECT brain images -- Image loci are ridges in geometric spaces -- Multiscale measures in linear scale-space for characterizing cerebral functional activations in 3D PET difference images -- Scale space analysis by stabilized inverse diffusion equations -- Intrinsic scale space for images on surfaces: The geodesic curvature flow -- Multi-spectral probabilistic diffusion using bayesian classification -- From high energy physics to low level vision -- Dynamic scale-space theories -- Recursive separable schemes for nonlinear diffusion filters -- Level set methods and the stereo problem -- Reliable classification of chrysanthemum leaves through Curvature Scale Space -- Multi-scale contour segmentation -- Reconstruction of self-similar functions from scale-space -- Multi-scale detection of characteristic figure structures using principal curvatures of image gray-level profile -- A new framework for hierarchical segmentation using similarity analysis -- Robust anisotropic diffusion: Connections between robust statistics, line processing, and anisotropic diffusion -- Fast adaptive alternatives to nonlinear diffusion in image enhancement: Green's function approximators and nonlocal filters -- A scale-space approach to shape similarity -- Multi-scale active shape description -- Scale-space filters and their robustness -- Directional anisotropic diffusion applied to segmentation of vessels in 3D images -- 3D shape representation: Transforming polygons into voxels -- Extraction of a structure feature from three-dimensional objects by scale-space analysis -- Slowed anisotropic diffusion -- Thin nets extraction using a multi-scale approach.

Sommario/riassunto

This book constitutes the refereed proceedings of the First International Conference on Scale-Space Theory for Computer Vision, Scale-Space '97, held in Utrecht, The Netherlands, in July 1997. The volume presents 21 revised full papers selected from a total of 41 submissions. Also included are 2 invited papers and 13 poster presentations. This book is the first comprehensive documentation of the application of Scale-Space techniques in computer vision and, in the broader context, in image processing and pattern recognition.