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Altri autori (Persone)	ParagiosNikos
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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	A Study of Non-smooth Convex Flow Decomposition -- Denoising Tensors via Lie Group Flows -- Nonlinear Inverse Scale Space Methods for Image Restoration -- Towards PDE-Based Image Compression -- Color Image Deblurring with Impulsive Noise -- Using an Oriented PDE to Repair Image Textures -- Image Cartoon-Texture Decomposition and Feature Selection Using the Total Variation Regularized L 1 Functional -- Structure-Texture Decomposition by a TV-Gabor Model -- From Inpainting to Active Contours -- Sobolev Active Contours -- Advances in Variational Image Segmentation Using AM-FM Models: Regularized Demodulation and Probabilistic Cue Integration -- Entropy Controlled Gauss-Markov Random Measure Field Models for Early Vision -- Global Minimization of the Active Contour Model with TV-Inpainting and Two-Phase Denoising -- Combined Geometric-Texture Image Classification -- Heuristically Driven Front Propagation for Geodesic Paths Extraction -- Trimap Segmentation for Fast and User-Friendly Alpha Matting -- Uncertainty-Driven Non-parametric Knowledge-Based Segmentation: The Corpus Callosum Case -- Dynamical Statistical Shape Priors for Level Set Based Sequence Segmentation -- Non-rigid Shape Comparison of Implicitly-Defined Curves -- Incorporating Rigid Structures in Non-rigid Registration

Using Triangular B-Splines -- Geodesic Image Interpolation: Parameterizing and Interpolating Spatiotemporal Images -- A Variational Approach for Object Contour Tracking -- Implicit Free-Form-Deformations for Multi-frame Segmentation and Tracking -- A Surface Reconstruction Method for Highly Noisy Point Clouds -- A C 1 Globally Interpolatory Spline of Arbitrary Topology -- Solving PDEs on Manifolds with Global Conformal Parametriazation -- Fast Marching Method for Generic Shape from Shading -- A Gradient Descent Procedure for Variational Dynamic Surface Problems with Constraints -- Regularization of Mappings Between Implicit Manifolds of Arbitrary Dimension and Codimension -- Lens Distortion Calibration Using Level Sets.

Sommario/riassunto

Mathematical methods has been a dominant research path in computational vision leading to a number of areas like ?ltering, segmentation, motion analysis and stereo reconstruction. Within such a branch visual perception tasks can either be addressed through the introduction of application-driven geometric ?ows or through the minimization of problem-driven cost functions where their lowest potential corresponds to image understanding. The 3rd IEEE Workshop on Variational, Geometric and Level Set Methods focused on these novel mathematical techniques and their applications to c- puter vision problems. To this end, from a substantial number of submissions, 30 high-quality papers were selected after a fully blind review process covering a large spectrum of computer-aided visual understanding of the environment. The papers are organized into four thematic areas: (i) Image Filtering and Reconstruction, (ii) Segmentation and Grouping, (iii) Registration and Motion Analysis and (iiii) 3D and Reconstruction. In the ?rst area solutions to image enhancement, inpainting and compression are presented, while more advanced applications like model-free and model-based segmentation are presented in the segmentation area. Registration of curves and images as well as multi-frame segmentation and tracking are part of the motion understanding track, while - troducing computationalprocessesinmanifolds,shapefromshading, calibration and stereo reconstruction are part of the 3D track. We hope that the material presented in the proceedings exceeds your exp- tations and will in?uence your research directions in the future. We would like to acknowledge the support of the Imaging and Visualization Department of Siemens Corporate Research for sponsoring the Best Student Paper Award.