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Nota di contenuto	Image Denoising and Restoration Targeted Iterative Filtering -- Generalized Gradient on Vector Bundle – Application to Image Denoising -- Expert Regularizers for Task Specific Processing -- A Spectral Approach to Total Variation -- Convex Generalizations of Total Variation Based on the Structure Tensor with Applications to Inverse Problems -- Adaptive Second-Order Total Variation: An Approach Aware of Slope Discontinuities -- Variational Methods for Motion Deblurring with Still Background -- Blind Deblurring Using a Simplified Sharpness Index -- A Cascadic Alternating Krylov Subspace Image

Restoration Method -- B-SMART: Bregman-Based First-Order Algorithms for Non-negative Compressed Sensing Problems -- Epigraphical Projection for Solving Least Squares Anscombe Transformed Constrained Optimization Problems -- Image Enhancement and Texture Synthesis Static and Dynamic Texture Mixing Using Optimal Transport -- A TGV Regularized Wavelet Based Zooming Model -- Anisotropic Third-Order Regularization for Sparse Digital Elevation Models -- A Fast Algorithm for Exact Histogram Specification. Simple Extension to Colour Images -- Constrained Sparse Texture Synthesis -- Outlier Removal Power of the L1-Norm Super-Resolution -- Optical Flow and 3D Reconstruction Why Is the Census Transform Good for Robust Optic Flow Computation? -- Generalised Perspective Shape from Shading in Spherical Coordinates -- Weighted Patch-Based Reconstruction: Linking (Multi-view) Stereo to Scale Space -- Optical Flow on Evolving Surfaces with an Application to the Analysis of 4D Microscopy Data -- Perspective Photometric Stereo with Shadows -- Solving the Uncalibrated Photometric Stereo Problem Using Total Variation -- Minimizing TGV-Based Variational Models with Non-convex Data Terms -- A Mathematically Justified Algorithm for Shape from Texture -- Scale Space and Partial Differential Equations Multi Scale Shape Index for 3D Object Recognition -- Compression of Depth Maps with Segment-Based Homogeneous Diffusion.-Scale Space Operators on Hierarchies of Segmentations -- Discrete Deep Structure -- Image Matching Using Generalized Scale-Space Interest Points -- A Fully Discrete Theory for Linear Osmosis Filtering -- L2-Stable Nonstandard Finite Differences for Anisotropic Diffusion -- Relations between Amoeba Median Algorithms and Curvature-Based PDEs -- Image and Shape Analysis, Segmentation Scale and Edge Detection with Topological Derivatives -- Active Contours for Multi-region Image Segmentation with a Single Level Set Function -- Regularized Discrete Optimal Transport -- Variational Method for Computing Average Images of Biological Organs -- A Hierarchical Approach to Optimal Transport -- Layered Mean Shift Methods -- Partial Optimality via Iterative Pruning for the Potts Model -- Wimmelbild Analysis with Approximate Curvature Coding Distance Images -- Defect Classification on Specular Surfaces Using Wavelets.

Sommario/riassunto

This book constitutes the refereed proceedings of the 4th International Conference on Scale Space Methods and Variational Methods in Computer Vision, SSVM 2013, held in Schloss Seggau near Graz, Austria, in June 2013. The 42 revised full papers presented were carefully reviewed and selected 69 submissions. The papers are organized in topical sections on image denoising and restoration, image enhancement and texture synthesis, optical flow and 3D reconstruction, scale space and partial differential equations, image and shape analysis, and segmentation.