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   Disciplina   006.4/2

   Soggetti   Signal processing
   Image processing
   Speech processing systems
   Optical data processing
   Pattern recognition
   Computer graphics
   Computational complexity
   Signal, Image and Speech Processing
   Image Processing and Computer Vision
   Pattern Recognition
   Computer Graphics
   Complexity

   Lingua di pubblicazione   Inglese

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   Livello bibliografico   Monografia

   Note generali   Bibliographic Level Mode of Issuance: Monograph

   Nota di contenuto   Computational complexity reduction in eigenspace approaches -- An algorithm for intrinsic dimensionality estimation -- Fully unsupervised clustering using centre-surround receptive fields with applications to colour-segmentation -- Multi-sensor fusion with Bayesian inference -- MORAL — A vision-based object recognition system for autonomous mobile systems -- Real-time pedestrian tracking in natural scenes -- Non-rigid object recognition using principal component analysis and geometric hashing -- Object identification with surface signatures --

Computing projective and permutation invariants of points and lines -- Point projective and permutation invariants -- Computing 3D projective invariants from points and lines -- 2D ? 2D geometric transformation invariant to arbitrary translations, rotations and scales -- Extraction of filled-in data from colour forms -- Improvement of vessel segmentation by elastically compensated patient motion in digital subtraction angiography images -- Three-dimensional quasi-binary image restoration for confocal microscopy and its application to dendritic trees -- Mosaicing of flattened images from straight homogeneous generalized cylinders -- Well-posedness of linear shape-from-shading problem -- Comparing convex shapes using Minkowski addition -- Deformation of discrete object surfaces -- Non-Archimedean normalized fields in texture analysis tasks -- The Radon transform-based analysis of bidirectional structural textures -- Textures and structural defects -- Self-calibration from the absolute conic on the plane at infinity -- A badly calibrated camera in ego-motion estimation — propagation of uncertainty -- 6DOF calibration of a camera with respect to the wrist of a 5-axis machine tool -- Automated camera calibration and 3D egomotion estimation for augmented reality applications -- Optimally rotation-equivariant directional derivative kernels -- A hierarchical filter scheme for efficient corner detection -- Defect detection on leather by oriented singularities -- Uniqueness of 3D affine reconstruction of lines with affine cameras -- Distortions of stereoscopic visual space and quadratic Cremona transformations -- Self-evaluation for active vision by the geometric information criterion -- Discrete-time rigidity-constrained optical flow -- An iterative spectral-spatial Bayesian labeling approach for unsupervised robust change detection on remotely sensed multispectral imagery -- Contrast enhancement of badly illuminated images based on Gibbs distribution and random walk model -- Adaptive non-linear predictor for lossless image compression -- Beyond standard regularization theory -- Fast stereovision by coherence detection -- Stereo matching using M-estimators -- Robust location based partial correlation -- Optimization of stereo disparity estimation using the instantaneous frequency -- Segmentation from motion: Combining Gabor- and Mallat-wavelets to overcome aperture and correspondence problem -- Contour segmentation with recurrent neural networks of pulse-coding neurons -- Multigrid MRF based picture segmentation with cellular neural networks -- Computing stochastic completion fields in linear-time using a resolution pyramid -- A Bayesian network for 3d object recognition in range data -- Improving the shape recognition performance of a model with Gabor filter representation -- Bayesian decision versus voting for image retrieval -- A structured neural network invariant to cyclic shifts and rotations -- Morphological grain operators for binary images -- A parallel 12-subiteration 3D thinning algorithm to extract medial lines -- Architectural image segmentation using digital watersheds -- Morphological iterative closest point algorithm -- Planning multiple views for 3-D object recognition and pose determination -- Fast and reliable object pose estimation from line correspondences -- Statistical 3-D object localization without segmentation using wavelet analysis -- A real-time monocular vision-based 3D mouse system -- Face recognition by elastic bunch graph matching -- A conditional mixture of neural networks for face detection, applied to locating and tracking an individual speaker -- Lipreading using Fourier transform over time -- Phantom faces for face analysis -- A new hardware structure for implementation of soft morphological filters -- A method for anisotropy analysis of 3D images -- Fast line and rectangle detection

by clustering and grouping -- 1st and 2nd order recursive operators for adaptive edge detection -- Smoothing noisy images without destroying predefined feature carriers -- Local subspace method for pattern recognition -- Testing the effectiveness of Non-Linear Rectification on gabor energy -- Neural-like thinning processing -- Detection of the objects with given shape on the grey-valued pictures -- Automatic parameter selection for object recognition using a parallel multiobjective genetic algorithm -- Unsupervised texture segmentation using Hermite transform filters -- Decomposition of the Hadamard matrices and fast Hadamard transform -- A characterization of digital disks by discrete moments -- "One-step" short-length DCT algorithms with data representation in the direct sum of the associative algebras -- Character extraction from scene image using fuzzy entropy and rule-based technique -- Facial image recognition using neural networks and genetic algorithms -- An energy minimisation approach to the registration, matching and recognition of images -- "Error-free" calculation of the convolution using generalized Mersenne and Fermat transforms over algebraic fields -- A new method of texture binarization -- Parameter optimisation of an image processing system using evolutionary algorithms -- Analysis of learning using segmentation models -- Stereo processing of image data from the Air-Borne CCD-scanner WAAC -- An adaptive method of color road segmentation -- Optical flow detection using a general noise model for gradient constraint -- Algorithmic solution and simulation results for vision-based autonomous mode of a planetary rover -- A framework for feature-based motion recovery in ground plane vehicle navigation -- Terrain reconstruction from multiple views -- Detecting motion independent of the camera movement through a log-polar differential approach -- Coordinate-free camera calibration -- A passive real-time gaze estimation system for human-machine interfaces -- An active vision system for obtaining high resolution depth information.

Sommario/riassunto	This book constitutes the refereed proceedings of the 7th International Conference on Computer Analysis of Images and Patterns, CAIP '97, held in Kiel, Germany, in September 1997. The volume presents 92 revised papers selected during a double-blind reviewing process from a total of 150 high-quality submissions. The papers are organized in topical sections on pattern analysis, object recognition and tracking, invariants, applications, shape, texture analysis, motion calibration, low-level processing, structure from motion, stereo and correspondence, segmentation and grouping, mathematical morphology, pose estimation, and face analysis.