

Contents of Volume I

Multiple View Geometry

A common framework for multiple view tensors.....	3
<i>A. Heyden</i>	
Computation of the quadrifocal tensor	20
<i>R. I. Hartley</i>	
Self-calibration of a 1D projective camera and its application to the self-calibration of a 2D projective camera	36
<i>O. Faugeras, L. Quan, P. Sturm</i>	

Stereo Vision and Calibration I

Multi viewpoint stereo from uncalibrated video sequences.....	55
<i>R. Koch, M. Pollefeys, L. Van Gool</i>	
Recognition of planar point configurations using the density of affine shape	72
<i>R. Berthilsson, A. Heyden</i>	
Autocalibration from planar scenes.....	89
<i>B. Triggs</i>	

Multiple View Geometry / Stereo Vision and Calibration / Geometry and Invariance / Structure from Motion

A new characterization of the trifocal tensor.....	109
<i>T. Papadopoulos, O. Faugeras</i>	
Threading fundamental matrices	124
<i>S. Avidan, A. Shashua</i>	
Use your hand as a 3D mouse, or, Relative orientation from extended sequences of sparse point and line correspondences using the affine trifocal tensor.....	141
<i>L. Bretzner, T. Lindeberg</i>	
Do we really need an accurate calibration pattern to achieve a reliable camera calibration?	158
<i>J.-M. Lavest, M. Viala, M. Dhome</i>	
Optimal estimation of three-dimensional rotation and reliability evaluation	175
<i>N. Ohta, K. Kanatani</i>	
From regular images to animated heads: A least squares approach	188
<i>P. Fua, C. Miccio</i>	

Stereo vision-based navigation in unknown indoor environment	203
<i>O. Schreer</i>	
Epipolar geometry of panoramic cameras	218
<i>T. Svoboda, T. Pajdla, V. Hlaváč</i>	
Occlusions, discontinuities, and epipolar lines in stereo	232
<i>H. Ishikawa, D. Geiger</i>	
Symmetry in perspective	249
<i>S. Carlsson</i>	
Projective and illumination invariant representation of disjoint shapes	264
<i>S. Startchik, R. Milanese, T. Pun</i>	
Robust techniques for the estimation of structure from motion in the uncalibrated case	281
<i>M. J. Brooks, W. Chojnacki, A. van den Hengel, L. Baumela</i>	
A factorization method for projective and Euclidean reconstruction from multiple perspective views via iterative depth estimation	296
<i>T. Ueshiba, F. Tomita</i>	
Automatic camera recovery for closed or open image sequences	311
<i>A. W. Fitzgibbon, A. Zisserman</i>	
Structure and motion from points, lines and conics with affine cameras	327
<i>F. Kahl, A. Heyden</i>	
Simultaneous estimation of viewing geometry and structure	342
<i>T. Brodský, C. Fermüller, Y. Aloimonos</i>	
What is computed by structure from motion algorithms?	359
<i>C. Fermüller, Y. Aloimonos</i>	
 Stereo Vision and Calibration II	
Complete dense stereovision using level set methods	379
<i>O. Faugeras, R. Keriven</i>	
The geometry and matching of curves in multiple views	394
<i>C. Schmid, A. Zisserman</i>	
Automatic modelling and 3D reconstruction of urban house roofs from high resolution aerial imagery	410
<i>T. Moons, D. Frère, J. Vandekerckhove, L. Van Gool</i>	
Closed-form solutions for the Euclidean calibration of a stereo rig	426
<i>G. Csurka, D. Demirdjian, A. Ruf, R. Horaud</i>	
 Colour and Indexing	
Is machine colour constancy good enough?	445
<i>B. Funt, K. Barnard, L. Martin</i>	

Colour model selection and adaptation in dynamic scenes.....	460
<i>Y. Raja, S. J. McKenna, S. Gong</i>	
Comprehensive colour image normalization.....	475
<i>G. D. Finlayson, B. Schiele, J. L. Crowley</i>	
Invariant-based shape retrieval in pictorial databases.....	491
<i>M. Kliot, E. Rivlin</i>	

Grouping and Segmentation

Concerning Bayesian motion segmentation, model averaging, matching and the trifocal tensor.....	511
<i>P. H. S. Torr, A. Zisserman</i>	
Self inducing relational distance and its application to image segmentation.....	528
<i>J. Shi, J. Malik</i>	
Contour continuity in region based image segmentation.....	544
<i>T. Leung, J. Malik</i>	

Colour and Indexing / Grouping and Segmentation / Tracking

On spatial quantization of color images.....	563
<i>J. Ketterer, J. Puzicha, M. Held, M. Fischer, J. M. Buhmann, D. Fellner</i>	
Using ifs and moments to build a quasi invariant image index.....	578
<i>J. M. Marie-Julie, H. Essafi</i>	
Determining a structured spatio-temporal representation of video content for efficient visualization and indexing.....	595
<i>M. Gelgon, P. Bouthemy</i>	
Demosaicing: Image reconstruction from color CCD samples.....	610
<i>R. Kimmel</i>	
Perceptual smoothing and segmentation of colour textures.....	623
<i>M. Petrou, M. Mirmehdi, M. Coors</i>	
Visual recognition using local appearance.....	640
<i>V. C. de Verdière, J. L. Crowley</i>	
A factorization approach to grouping.....	655
<i>P. Perona, W. Freeman</i>	
Faithful least-squares fitting of spheres, cylinders, cones and tori for reliable segmentation.....	671
<i>G. Lukács, R. Martin, D. Marshall</i>	
Multi-step procedures for the localization of 2D and 3D point landmarks and automatic ROI size selection.....	687
<i>S. Frantz, K. Rohr, H. S. Stiehl</i>	

Object oriented motion estimation in color image sequences	704
<i>V. Rehrmann</i>	
Multi-scale and snakes for automatic road extraction	720
<i>H. Mayer, I. Laptev, A. Baumgartner</i>	
A model-free voting approach for integrating multiple cues	734
<i>C. G. Bräutigam, J.-O. Eklundh, H. I. Christensen</i>	
Finding boundaries in natural images: A new method using point descriptors and area completion	751
<i>S. Belongie, J. Malik</i>	
A smoothing filter for CONDENSATION	767
<i>M. Isard, A. Blake</i>	
Camea-based ID verification by signature tracking	782
<i>M. E. Munich, P. Perona</i>	
Model based tracking for navigation and segmentation	797
<i>B. Southall, J. A. Marchant, T. Hague, B. F. Buxton</i>	
Beginning a transition from a local to a more global point of view in model-based vehicle tracking	812
<i>M. Haag, H.-H. Nagel</i>	
View-based adaptive affine tracking	828
<i>F. de la Torre, S. Gong, S. McKenna</i>	
An efficient combination of 2D and 3D shape descriptions for contour based tracking of moving objects	843
<i>J. Denzler, B. Heigl, H. Niemann</i>	
 Tracking, CONDENSATION	
2D-Object tracking based on projection-histograms	861
<i>S. Huwer, H. Niemann</i>	
W4S: A real-time system for detecting and tracking people in 2 1/2D	877
<i>I. Haritaoglu, D. Harwood, L. S. Davis</i>	
ICONDENSATION: Unifying low-level and high-level tracking in a stochastic framework	893
<i>M. Isard, A. Blake</i>	
A probabilistic framework for matching temporal trajectories: CONDENSATION-based recognition of gestures and expressions	909
<i>M. J. Black, A. D. Jepson</i>	
 Author Index	 925

Contents of Volume II

Matching and Registration

Matching hierarchical structures using association graphs	3
<i>M. Pelillo, K. Siddiqi, S. W. Zucker</i>	
Stereo matching with Implicit detection of occlusions	17
<i>R. Trapp, S. Drüe, G. Hartmann</i>	
A solution for the registration of multiple 3D point sets using unit quaternions	34
<i>R. Benjemaa, F. Schmitt</i>	
Robust registration of dissimilar single and multimodal images	51
<i>C. Nikou, F. Heitz, J.-P. Armspach</i>	

Image Sequences and Video

Decoupling Fourier components of dynamic image sequences: A theory of signal separation, image segmentation, and optical flow estimation	69
<i>D. Vernon</i>	
Spatiotemporally adaptive estimation and segmentation of OF-fields	86
<i>H.-H. Nagel, A. Gehrke</i>	
Robust video mosaicing through topology inference and local to global alignment	103
<i>H. S. Sawhney, S. Hsu, R. Kumar</i>	

Matching and Registration / Shape and Shading / Motion and Flow / Medical Image Understanding and Rendering

Flexible syntactic matching of curves	123
<i>Y. Gdalyahu, D. Weinshall</i>	
Holistic matching	140
<i>A. D. J. Cross, E. R. Hancock</i>	
Creaseness from level set extrinsic curvature	156
<i>A. M. López, F. Lumberras, J. Serrat</i>	
Multichannel shape from shading techniques for moving specular surfaces ..	170
<i>G. Balschbach, J. Klinke, B. Jähne</i>	
Modelling objects having quadric surfaces incorporating geometric constraints	185
<i>N. Werghi, R. Fisher, C. Robertson, A. Ashbrook</i>	

Surface reconstruction with multiresolution discontinuity analysis	202
<i>N. F. Law, R. Chung</i>	
Shape from Chebyshev nets	215
<i>J. Koenderink, A. van Doorn</i>	
Changes in surface convexity and topology caused by distortions of stereoscopic visual space	226
<i>G. Barattoff, Y. Aloimonos</i>	
Reconstruction of smooth surfaces with arbitrary topology adaptive splines	241
<i>A. J. Stoddart, M. Baker</i>	
(Mis?-) Using DRT for generation of natural language text from image sequences	255
<i>R. Gerber, H.-H. Nagel</i>	
The structure of the optic flow field	271
<i>M. Nielsen, O. F. Olsen</i>	
Optical flow using overlapped basis functions for solving global motion problems	288
<i>S. Srinivasan, R. Chellappa</i>	
The role of total least squares in motion analysis	305
<i>M. Mühlich, R. Mester</i>	
Study of dynamical processes with tensor-based spatiotemporal image processing techniques	322
<i>B. Jähne, H. Haußecker, H. Scharr, H. Spies, D. Schmundt, U. Schurr</i>	
Motion recovery from image sequences: Discrete viewpoint vs. differential viewpoint	337
<i>Y. Ma, J. Košecká, S. Sastry</i>	
Discrete wavelet analysis: A new framework for fast optic flow computation	354
<i>C. P. Bernard</i>	
Automatic detection and labelling of the human cortical folds in magnetic resonance data sets	369
<i>G. Lohmann, D. Y. von Cramon</i>	
Efficient 3-D scene visualization by image extrapolation	382
<i>T. Werner, T. Pajdla, V. Hlaváč</i>	

Shading and Shape

What shadows reveal about object structure	399
<i>D. J. Kriegman, P. N. Belhumeur</i>	
Shape representations from shading primitives	415
<i>J. Haddon, D. Forsyth</i>	

A comparison of measures for detecting natural shapes in cluttered backgrounds	432
<i>L. R. Williams, K. K. Thornber</i>	
Bias-variance tradeoff for adaptive surface meshes	449
<i>R. C. Wilson, E. R. Hancock</i>	

Appearance and Recognition

Recognizing 3-D objects with linear support vector machines	469
<i>M. Pontil, S. Rogai, A. Verri</i>	
Active appearance models	484
<i>T. F. Cootes, G. J. Edwards, C. J. Taylor</i>	
Estimating coloured 3D face models from single images: An example based approach	499
<i>T. Vetter, V. Blanz</i>	
A comparison of active shape model and scale decomposition based features for visual speech recognition	514
<i>I. Matthews, J. A. Bangham, R. Harvey, S. Cox</i>	

Motion Segmentation

Motion segmentation and depth ordering based on morphological segmentation	531
<i>L. Bergen, F. Meyer</i>	
Image sequence restoration: A PDE based coupled method for image restoration and motion segmentation	548
<i>P. Kornprobst, R. Deriche, G. Aubert</i>	
Joint estimation-segmentation of optic flow	563
<i>É. Mémin, P. Pérez</i>	

Recognition / Robotics and Active Vision

Face recognition using active appearance models	581
<i>G. J. Edwards, T. F. Cootes, C. J. Taylor</i>	
Face recognition using evolutionary pursuit	596
<i>C. Liu, H. Wechsler</i>	
Recognizing faces by weakly orthogonalizing against perturbations	613
<i>K. Nagao, M. Sohma</i>	
A probabilistic approach to object recognition using local photometry and global geometry	628
<i>M. C. Burl, M. Weber, P. Perona</i>	

Hypothesis verification in model-based object recognition with a Gaussian error model	642
<i>F. Jurie</i>	
Continuous audio-visual speech recognition	657
<i>J. Luetttin, S. Dupont</i>	
Finding surface correspondence for object recognition and registration using pairwise geometric histograms	674
<i>A. P. Ashbrook, R. B. Fisher, C. Robertson, N. Werghi</i>	
Integrating iconic and structured matching	687
<i>R. B. Fisher, A. MacKirdy</i>	
Combining multiple views and temporal associations for 3-D object recognition	699
<i>A. Massad, B. Mertsching, S. Schmalz</i>	
Model-based recognition of 3D objects from one view	716
<i>I. Weiss, M. Ray</i>	
A two-stage probabilistic approach for object recognition	733
<i>S. Z. Li, J. Hornegger</i>	
Combining geometric and probabilistic structure for active recognition of 3D objects	748
<i>S. Herbin</i>	
Spatial dependence in the observation of visual contours	765
<i>J. MacCormick, A. Blake</i>	
Handling uncertainty in 3d object recognition using Bayesian networks	782
<i>B. Krebs, M. Burkhardt, B. Korn</i>	
Optimal robot self-localization and reliability evaluation	796
<i>K. Kanatani, N. Ohta</i>	
Mobile robot localisation using active vision	809
<i>A. J. Davison, D. W. Murray</i>	
 Structure from Motion	
From reference frames to reference planes: Multi-view parallax geometry and applications	829
<i>M. Irani, P. Anandan, D. Weinshall</i>	
Duality, rigidity and planar parallax	846
<i>A. Criminisi, I. Reid, A. Zisserman</i>	
On degeneracy of linear reconstruction from three views: Linear line complex and applications	862
<i>G. P. Stein, A. Shashua</i>	
 Author Index	 879