

1. Record Nr.	UNISA996202530403316
Titolo	Computer Vision -- ECCV 2014 [[electronic resource]] : 13th European Conference, Zurich, Switzerland, September 6-12, 2014, Proceedings, Part IV / / edited by David Fleet, Tomas Pajdla, Bernt Schiele, Tinne Tuytelaars
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2014
ISBN	3-319-10593-0
Edizione	[1st ed. 2014.]
Descrizione fisica	1 online resource (XXVIII, 848 p. 340 illus.)
Collana	Image Processing, Computer Vision, Pattern Recognition, and Graphics ; ; 8692
Disciplina	006.6 006.37
Soggetti	Optical data processing Pattern recognition Artificial intelligence Computer graphics Image Processing and Computer Vision Pattern Recognition Artificial Intelligence Computer Graphics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di contenuto	Intro -- Foreword -- Preface -- Organization -- Table of Contents -- Poster Session 4 (continued) -- Schwarps: Locally Projective Image Warps Based on 2D Schwarzian Derivatives -- 1 Introduction -- 2 Background on Projective Differential Invariants -- 2.1 The Cross-Ratio -- 2.2 The 1D Schwarzian Derivative -- 2.3 Multidimensional Schwarzian Derivatives (MSDs) -- 3 Schwarzian Equations in Two Dimensions -- 3.1 The 1D Schwarzian Derivative -- 3.2 2D Schwarzian Equations -- 4 Modeling the Projection of Deforming Surfaces -- 4.1 The Schwarp -- 5 Experimental Results -- 5.1 Implementation Details -- 5.2 Synthetic Data -- 5.3 Real Data -- 6 Conclusion -- References -- gDLS: A Scalable Solution to the Generalized Pose and Scale Problem

-- 1 Introduction -- 2 Related Work -- 3 Problem Statement -- 4 Solution Method -- 4.1 A New Least Squares Cost Function -- 4.2 Macaulay Matrix Solution -- 5 Experiments -- 5.1 Numerical Stability -- 5.2 Simulations with Noisy Synthetic Data -- 5.3 SLAM Registration with Real Images -- 5.4 Runtime Analysis -- 6 Conclusion -- Appendix -- References -- Generalized Connectivity Constraints for Spatio-temporal 3D Reconstruction -- 1 Introduction -- 1.1 Contributions -- 1.2 Related Work -- 2 3D Reconstruction with Connectivity Constraints -- 2.1 Spatio-temporal Multi-view Reconstruction -- 2.2 Connectivity Constraints via Directed Graphs -- 3 Generalized Connectivity Constraints for Objects of Arbitrary Genus -- 3.1 Handle and Tunnel Loops -- 3.2 Loop Connectivity Constraints -- 4 Numerical Optimization -- 5 Experiments -- 6 Conclusion -- References -- Passive Tomography of Turbulence Strength -- 1 The Need to Recover Turbulence Strength -- 2 Theoretical Background -- 2.1 Turbulence Statistics and Refraction -- 2.2 Linear Tomography -- 3 Principle of C2n Tomography -- 3.1 Numeric Tomographic Recovery of C2n -- 4 Simulation.

5 Experiments -- 5.1 Laboratory -- 5.2 Outdoors -- 6 Discussion -- References -- A Non-local Method for Robust Noisy Image Completion -- 1 Introduction -- 2 Related Works -- 3 The Proposed Algorithm -- 3.1 Overview -- 3.2 Robust Patch Matching and Grouping -- 3.3 Collaborative Filtering Using Low-Rank Matrix Completion -- 4 Implementation Details and Experiments -- 4.1 Implementation Details -- 4.2 Results and Comparisons -- 5 Conclusions and Future Works -- References -- Improved Motion Invariant Deblurring through Motion Estimation -- 1 Introduction -- 2 Previous Work -- 3 Motion Invariant Capture -- 3.1 Motion Invariance Artifacts -- 4 Artifact-Based Motion Estimation -- 5 Experiments -- 5.1 Synthetic Data -- 5.2 Real Camera Images -- 6 Limitations -- 7 Multiple Moving Objects -- 8 Conclusion -- References -- Consistent Matting for Light Field Images -- 1 Introduction -- 2 Related Works -- 3 EPI in Light Field Images -- 3.1 The EPI Constraint -- 3.2 Color Sample Correspondences in EPI -- 4 Consistent Matting for Light Field Images -- 4.1 Pre-processing: Color Samples Collection -- 4.2 EPI Estimation and Propagation -- 4.3 Color Sample Selection -- 4.4 Consistent Matting with the EPI Smoothness Term -- 5 Experimental Results -- 5.1 Light Field Matting Dataset -- 5.2 Evaluations -- 5.3 Comparisons -- 6 Limitation and Discussion -- 7 Conclusion -- References -- Consensus of Regression for Occlusion-Robust Facial Feature Localization -- 1 Introduction -- 2 Related Work -- 3 Localization through Occlusion-Robust Regression -- 3.1 Occlusion-Specific Regressors -- 3.2 Consensus of Regression on Local Response Maps -- 3.3 Occlusion Inference -- 4 Results and Discussions -- 4.1 Experimental Setup -- 4.2 Evaluation on Facial Feature Localization -- 4.3 Evaluation on CoR Framework -- 4.4 Evaluation on Occlusion Detection -- 5 Conclusions -- References.

Learning the Face Prior for Bayesian Face Recognition -- 1 Introduction -- 2 Related Work -- 3 Learning Identity Subspace -- 3.1 Notation -- 3.2 The Extended Model of MRD -- 3.3 The Construction of Identity Subspace -- 3.4 The Construction of Training Set for Bayesian Face -- 4 Learning the Distributions of Identity -- 4.1 Review of GPs and GPR -- 4.2 Gaussian Mixture Modeling with GPR -- 4.3 The Leave-Set-Out Method -- 4.4 Bayesian Face Recognition Using the Face Prior -- 4.5 Discussion -- 5 Experimental Results -- 5.1 Datasets -- 5.2 Parameter Setting -- 5.3 Performance Analysis of the Proposed Approach -- 5.4 Comparison with Other Bayesian Face Methods -- 5.5 Handling Large Poses -- 5.6 Handling Large Occlusions -- 5.7 Comparison with the State-of-Art Methods -- 6 Conclusions -- References -- Spatio-

temporal Event Classification Using Time-Series Kernel Based Structured Sparsity -- 1 Introduction -- 2 Methods -- 2.1 Facial Feature Point Localization -- 2.2 Global Alignment Kernel -- 2.3 Time-series Classification using SVM -- 2.4 Multi-class Classification of Time Series Using Structured Sparsity -- 3 Experiments -- 3.1 Datasets -- 3.2 Time-Series Dictionary Building -- 3.3 Gesture Classification on 6DMG -- 3.4 Emotional Expression Classification on CK+ -- 3.5 Action Unit Onset Classification on GFT50 -- 4 Conclusions -- References -- Feature Disentangling Machine - A Novel Approach of Feature Selection and Disentangling in Facial Expression Analysis -- 1 Introduction -- 2 Related Work -- 3 Methodology -- 3.1 A Brief Review on Sparse Support Vector Machine -- 3.2 Formulation for the FDM -- 3.3 Algorithm for Solving Feature Disentangling Machine -- 3.4 Computational Complexity -- 4 Experimental Results -- 4.1 Experiments on the CK+ Database -- 4.2 Experiments on the JAFFE Database -- 5 Conclusion and Future Work -- References.

Joint Unsupervised Face Alignment and Behaviour Analysis -- 1 Introduction -- 2 Method -- 2.1 Definitions and Prerequisites -- 2.2 Autoregressive Component Analysis with Spatial Alignment -- 3 Comparison with State-of-the-Art Component Analysis Techniques -- 4 Experiments -- 4.1 Spatio-temporal Behaviour Analysis Results in MMI Database -- 4.2 Behaviour Analysis of Spontaneous Smiles in UVS Database -- 4.3 Landmark Points Localization Results -- 5 Conclusions -- References -- Learning a Deep Convolutional Network for Image Super-Resolution -- 1 Introduction -- 2 Related Work -- 3 Convolutional Neural Networks for Super-Resolution -- 3.1 Formulation -- 3.2 Relationship to Sparse-Coding-Based Methods -- 3.3 Loss Function -- 4 Experiments -- 4.1 Quantitative Evaluation -- 4.2 Running Time -- 5 Further Analyses -- 5.1 Learned Filters for Super-Resolution -- 5.2 Learning Super-Resolution from ImageNet -- 5.3 Filter Number -- 5.4 Filter Size -- 6 Conclusion -- References -- Discriminative Indexing for Probabilistic Image Patch Priors -- 1 Introduction -- 2 Observations and Our General Framework -- 2.1 Background and Notations -- 2.2 Observations and Our Approach -- 3 Index-Assisted Patch Prior Optimization -- 4 Prior Index Construction -- 5 Experiments -- 5.1 Evaluation on Non-blind Image Deblurring -- 5.2 Evaluation on Prior Indexing and Parameter Tuning -- 5.3 Deblurring High-Resolution Photos from Real Life -- 5.4 Evaluation on Image Denoising -- 6 Conclusion -- References -- Modeling Video Dynamics with Deep Dynencoder -- 1 Introduction -- 2 Model Description -- 2.1 Dynencoder -- 2.2 Deep Dynencoder -- 2.3 Discussion -- 3 Vision Applications of Deep Dynencoder -- 3.1 DT Synthesis -- 3.2 Video Classification -- 3.3 Video Segmentation -- 4 Experiments -- 4.1 DT Synthesis -- 4.2 Traffic Scene Classification -- 4.3 Motion Segmentation.

5 Conclusion and Discussion -- References -- Good Image Priors for Non-blind Deconvolution: -- 1 Introduction -- 2 Overview -- 3 Patch-Pyramid Prior -- 3.1 Optimization -- 3.2 Z-Step -- 3.3 X-Step -- 4 Locally Adapted Priors -- 5 How Do Example Images Help? -- 6 Comparison to Leading Methods -- 6.1 Synthetically Blurred Images -- 6.2 Real Photos with Unknown Blur -- 6.3 Limitations -- 7 Conclusion -- References -- Image Deconvolution Ringing Artifact Detection and Removal via PSF Frequency Analysis -- 1 Introduction -- 2 Ringing Artifact Detection -- 2.1 Using Gabor Filters -- 2.2 Artifact Detection Algorithm -- 3 Ringing Artifact Removal -- 3.1 f Sub-problem -- 3.2 u Sub-problem -- 3.3 Summary of the Artifact Removal Algorithm -- 4 Experimental Results -- 5 Conclusions -- References -- View-Consistent 3D Scene Flow Estimation over Multiple Frames -- 1

Introduction -- 2 Related Work -- 3 Method -- 3.1 View-Consistent Data Term -- 3.2 Shape and Motion Regularization -- 3.3 Spatial Segmentation Regularization -- 3.4 Multiple Frame Extension -- 3.5 Optimization and Proposal Generation -- 4 Evaluation -- 4.1 Qualitative Evaluation -- 4.2 KITTI Benchmark -- 5 Conclusion -- References -- Hand Waving Away Scale -- 1 Introduction -- 2 Related Work -- 2.1 Non-IMU Methods -- 2.2 IMU Methods -- 3 Recovery of Scale -- 3.1 In One Dimension -- 3.2 In Three Dimensions -- 3.3 Temporal Alignment -- 3.4 Gravity as a Friend -- 3.5 Classifying Useful Data -- 4 Experiments -- 4.1 Chessboard Experiments -- 4.2 Measuring Pupil Distance -- 4.3 3D Scanning -- 5 Conclusion -- References -- A Non-Linear Filter for Gyroscope-Based Video Stabilization -- 1 Introduction -- 2 Background and Prior Work -- 3 Algorithm Description -- 3.1 Camera Tracking Using the Gyroscope -- 3.2 Motion Model and Smoothing Algorithm -- 3.3 Output Synthesis and Rolling-Shutter Correction. 3.4 Parameter Selection.

---

#### Sommario/riassunto

The seven-volume set comprising LNCS volumes 8689-8695 constitutes the refereed proceedings of the 13th European Conference on Computer Vision, ECCV 2014, held in Zurich, Switzerland, in September 2014. The 363 revised papers presented were carefully reviewed and selected from 1444 submissions. The papers are organized in topical sections on tracking and activity recognition; recognition; learning and inference; structure from motion and feature matching; computational photography and low-level vision; vision; segmentation and saliency; context and 3D scenes; motion and 3D scene analysis; and poster sessions.

---