

1. Record Nr.	UNINA9910298988403321
Titolo	Computer Vision, Imaging and Computer Graphics: Theory and Applications : International Joint Conference, VISIGRAPP 2013, Barcelona, Spain, February 21-24, 2013, Revised Selected Papers // edited by Sebastiano Battiato, Sabine Coquillart, Robert S. Laramee, Andreas Kerren, José Braz
Pubbl/distr/stampa	Berlin, Heidelberg : , : Springer Berlin Heidelberg : , : Imprint : Springer, , 2014
ISBN	3-662-44911-0
Edizione	[1st ed. 2014.]
Descrizione fisica	1 online resource (XVI, 245 p. 135 illus.)
Collana	Communications in Computer and Information Science, , 1865-0929 ; ; 458
Disciplina	006.37
Soggetti	Computer science Computer graphics Optical data processing Computer Science, general Computer Graphics Image Processing and Computer Vision
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes Index.
Nota di contenuto	Intro -- Preface -- Organization -- Contents -- Computer Graphics Theory and Applications -- Real-Time Lattice Boltzmann Shallow Waters Method for Breaking Wave Simulations -- 1 Introduction -- 1.1 Related Work -- 2 Methodology -- 2.1 Lattice Boltzmann Shallow Waters -- 2.2 Dry-Wet Region Tracking -- 2.3 Two-Way Coupling of Dynamic Rigid Bodies -- 2.4 Coupling of Particle Systems -- 3 Implementation Details -- 4 Results and Discussion -- References -- Asymmetry Patterns Shape Contexts to Describe the 3D Geometry of Craniofacial Landmarks -- 1 Introduction -- 2 Asymmetry Patterns Shape Contexts -- 2.1 3D Shape Contexts -- 2.2 Rotational Symmetry -- 2.3 Asymmetry Patterns -- 2.4 Spatial Relationships -- 3 Experimental Evaluation -- 3.1 Craniofacial Landmarks -- 3.2 Accuracy -- 3.3 Implementation and Complexity -- 4 Discussion -- 5 Conclusions -- References -- Quasi-Delaunay Triangulations Using

GPU-Based Edge-Flips -- 1 Introduction -- 2 Related Work -- 3 Data Structures -- 4 Algorithm Overview -- 4.1 Detection, Exclusion and Processing -- 4.2 Repair -- 4.3 Handling Problematic and Worst Cases -- 5 Implementation Details -- 6 Experimental Results -- 6.1 Full Random 2D Triangulations -- 6.2 Noise 2D Triangulations -- 6.3 3D Surface Triangulations -- 7 Discussion and Conclusions -- References -- Data-Aware Picking for Medical Models -- 1 Introduction -- 2 Related Work -- 3 DAAPMed Metaphor -- 3.1 Data Aware 3D Selection Metaphor -- 3.2 Implementation Details -- 4 Evaluation and Results -- 4.1 Design Details of the Clipping Plane Technique in Virtual Reality -- 4.2 Test Design -- 4.3 Statistical Results -- 4.4 Post-questionnaire Results -- 5 Picking Optimizations -- 5.1 Shake Filtering -- 5.2 Extending the Selection Candidates Using VML -- 6 Conclusions -- References -- Information Visualization Theory and Applications.

An Interactive Visualization for Tabbed Browsing Behavior Analysis -- 1 Introduction -- 2 Related Research -- 3 Requirement Analysis -- 4 WebComets -- 4.1 Design -- 4.2 Interaction -- 5 Use Case Scenario -- 6 Evaluation -- 7 Conclusions -- References -- The Landscape Metaphor for Visualization of Molecular Similarities -- 1 Introduction -- 2 Related Work -- 3 Compound Libraries and Clustered Graphs -- 3.1 Molecular Similarity Graph -- 3.2 Scaffold-Based Cluster Hierarchy -- 4 Edge-Aware Drawing of Clustered Graphs -- 4.1 Extending the Input Hierarchy -- 4.2 Edge-Aware Polygon Partitioning -- 5 Results and Application -- 5.1 Evaluation of Edge Length -- 5.2 Representation of Chemical Information -- 6 Conclusions and Outlook -- References -- Computer Vision Theory and Applications -- Facial Landmarks Localization Estimation by Cascaded Boosted Regression -- 1 Introduction -- 2 Related Work -- 3 Landmark Position Estimation by Cascaded Boosted Regression -- 3.1 The First Level Regressor -- 3.2 Next Regression Levels -- 3.3 Other Weak Regressors -- 3.4 Parameters Settings -- 4 Evaluation of Performance -- 4.1 Evaluation Methodology -- 4.2 Results -- 5 Evaluation of Temporal Stability -- 5.1 Motivation -- 5.2 Results -- 6 Conclusions -- References -- A Video Retargeting Technique for RGB-D Camera -- 1 Introduction -- 2 Related Works -- 3 The Proposed Approach -- 3.1 Important Map -- 3.2 Image Retargeting -- 4 Results -- 5 Conclusions -- References -- A Robust Least Squares Solution to the Calibrated Two-View Geometry with Two Known Orientation Angles -- 1 Introduction -- 2 Problem Statement -- 3 Previous Work -- 3.1 Kalantari et al.'s Solution cc -- 3.2 Fraundorfer et al.'s Solution cc -- 4 Proposed Solution -- 4.1 3-Point Algorithm for the Minimal Case -- 4.2 4-Point Algorithm for the Least Squares Case -- 5 Experiments -- 5.1 Synthetic Data.

5.2 Estimation Error for the Minimal Case -- 5.3 Estimation Error for the Least Squares Case -- 5.4 Estimation Error for the Number of Point Correspondences -- 5.5 Computation Time -- 6 Conclusions -- References -- Robust Iris Localisation in Challenging Scenarios -- 1 Introduction -- 2 Related Work -- 3 Joint Detection of Iris Centre and Limbic Contour -- 3.1 Algorithm Overview -- 3.2 Iris Centre Detection -- 3.3 Limbic Contour Detection -- 3.4 Best Pair Centre/Contour -- 3.5 Pupillary Contour Detection -- 4 Results -- 4.1 Tested Dataset -- 4.2 Iris Centre Candidate Detection -- 4.3 Best Centre/Contour Pair Discrimination -- 4.4 Limbic Contour Segmentation Errors -- 5 Conclusions -- References -- Xtru3D: Single-View 3D Object Reconstruction from Color and Depth Data -- 1 Introduction -- 2 Global Overview -- 3 Computation of the Initial Volume -- 3.1 Cluster Extraction -- 3.2 Voxel Filling by Extrusion -- 3.3 Consistency Check -- 4 Color-Based Model Refinement -- 4.1 Improvement of the Object Segmentation -- 4.2 Hole Filling Through Depth Inpainting -- 5

Experiments -- 5.1 Evaluation of the Accuracy of the Reconstructed Mesh -- 5.2 Model Reconstruction Results -- 5.3 Application to Grasping -- 6 Discussion and Future Work -- References -- Facial Landmark Localization and Feature Extraction for Therapeutic Face Exercise Classification -- 1 Introduction -- 2 Related Work -- 3 Method -- 3.1 Curvature Analysis -- 3.2 Extraction of Curvature Information -- 3.3 Extraction of Line Profiles -- 3.4 Extraction of Point Signatures -- 3.5 Automation of the Feature Extraction Process -- 4 Experiments -- 4.1 Exercises and Dataset -- 4.2 Evaluation of the Discriminative Power -- 4.3 Evaluation of the Automated Landmark Localization -- 4.4 Evaluation of Feature Extraction from Automatically Determined Regions -- 5 Summary and Discussion -- References.

A Curious Vision System for Autonomous and Cumulative Object Learning -- 1 Introduction -- 2 Object Learning -- 2.1 Stereo Segmentation and Tracking of the Object -- 2.2 Learning Object Models -- 2.3 Feature Dictionary -- 2.4 Recognition -- 3 Attention Mechanism -- 3.1 Bottom-Up Saliency at Interest Points -- 3.2 Attention Based on Learning Progress -- 3.3 Top-Down Rejection of Familiar Objects -- 3.4 Top-Down Rejection of Recently Visited Locations -- 4 Self-correction Mechanism -- 4.1 Merging Technique -- 4.2 Splitting Technique -- 5 Experiments and Results -- 5.1 Experimental Setup -- 5.2 Evaluation Method -- 5.3 Two Experimental Scenarios -- 5.4 Results -- 6 Conclusions -- References -- Single Camera Hand Pose Estimation from Bottom-Up and Top-Down Processes -- 1 Introduction -- 2 Related Work -- 3 Algorithm -- 3.1 General Approach -- 3.2 Training Images Generation -- 3.3 Segmentation and Localization -- 3.4 Pose Estimation -- 4 Results -- 4.1 Top-Down vs Bottom-up -- 4.2 Pose Estimation -- 5 Conclusions -- References -- Shape from Motion Blur Caused by Random Camera Rotations Imitating Fixational Eye Movements -- 1 Introduction -- 2 Motion Blur Caused by Random Camera Rotations -- 2.1 Camera Motions Imitating Tremor -- 2.2 Relation Between Motion Blur and Depth -- 3 Algorithms for Depth Recovery -- 3.1 Principle of Proposed Algorithms -- 3.2 Two-Step Method -- 3.3 Direct Method -- 4 Numerical Evaluation -- 5 Discussions -- 5.1 Parameter Determination -- 5.2 Advantages Over Depth-from-Focus -- 6 Conclusions -- References -- Author Index.

---

#### Sommario/riassunto

This book constitutes the refereed proceedings of the 8th International Conference, VISIGRAPP 2013 consisting of the Joint Conferences on Computer Vision (VISAPP), the International Conference on Computer Graphics, GRAPP 2013, and the International Conference on Information Visualization IVAPP 2013, held in Barcelona, Spain, in February 2013. The 15 revised full papers presented were carefully reviewed and selected from 445 submissions. The papers are organized in topical sections on theory and applications in computer vision, image analysis, computer graphics, and information visualization.

---