

1. Record Nr.	UNINA9910485003903321
Titolo	Image Analysis and Processing - ICIAP 2017 : 19th International Conference, Catania, Italy, September 11-15, 2017, Proceedings, Part II // edited by Sebastiano Battiato, Giovanni Gallo, Raimondo Schettini, Filippo Stanco
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2017
ISBN	3-319-68548-1
Edizione	[1st ed. 2017.]
Descrizione fisica	1 online resource (XXVIII, 795 p. 352 illus.)
Collana	Image Processing, Computer Vision, Pattern Recognition, and Graphics ; ; 10485
Disciplina	621.367
Soggetti	Optical data processing Artificial intelligence Pattern recognition User interfaces (Computer systems) Data mining Computer communication systems Image Processing and Computer Vision Artificial Intelligence Pattern Recognition User Interfaces and Human Computer Interaction Data Mining and Knowledge Discovery Computer Communication Networks
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Intro -- Preface -- Organization -- Contents - Part II -- Contents - Part I -- Image Analysis, Detection and Recognition -- 3D Face Recognition in Continuous Spaces -- 1 Introduction -- 2 Detection of Characteristic Points in 3D Faces -- 3 Alignment of Two Faces -- 4 Functional Representation -- 5 Experimental Results -- 6 Discussion and Conclusions -- References -- Object Detection for Crime Scene Evidence Analysis Using Deep Learning -- 1 Introduction -- 2 Related Work -- 3 Methodology -- 3.1 Background of Faster-RCNN -- 3.2

VGG-16 Network -- 3.3 Object Detection -- 4 Experiments and Results -- 4.1 Datasets -- 4.2 Experimental Setup -- 4.3 Detection Accuracy -- 4.4 Detection Time -- 4.5 Experiments on the Karina Dataset -- 4.6 Discussion -- 5 Conclusion -- References -- Person Re-Identification Using Partial Least Squares Appearance Modelling -- 1 Introduction -- 2 Method -- 2.1 Partial Least Squares Foreground Appearance Modelling -- 2.2 Foreground Feature Extraction and Feature Weighting -- 2.3 Distance Metric Learning -- 3 Results and Discussion -- 4 Conclusions -- References -- Gender and Expression Analysis Based on Semantic Face Segmentation -- 1 Introduction -- 2 Related Works -- 3 The Face Segmentation Algorithm -- 3.1 Feature Extraction -- 3.2 Classification -- 4 The Proposed Gender and Expression Classification Algorithms -- 4.1 Gender Classification -- 4.2 Expression Classification -- 5 Experimental Setup -- 5.1 Gender and Expression Classification -- 6 Discussion of Results -- 6.1 Gender Recognition -- 6.2 Expression Recognition -- 7 Conclusions -- References -- Two More Strategies to Speed Up Connected Components Labeling Algorithms -- 1 Introduction -- 2 Previous Works -- 3 Pattern Analysis and Modeling of Decision Trees -- 4 Parallel Connected Components Labeling -- 5 Experimental Evaluation -- 5.1 Datasets. 5.2 Frequencies Results -- 5.3 Parallel Results -- 6 Conclusions -- References -- Embedded Real-Time Visual Search with Visual Distance Estimation -- 1 Introduction -- 2 Related Work -- 3 Proposed Pipeline -- 3.1 Image Analyzer -- 3.2 Retrieval Stage -- 3.3 Multiple Results Loop -- 3.4 Distance Estimation -- 4 Experiments and Results -- 4.1 Distance Estimation Accuracy -- 4.2 Performances -- 5 Conclusions -- References -- Synchronization in the Symmetric Inverse Semigroup -- 1 Introduction -- 2 Synchronization -- 2.1 Matrix Formulation -- 3 Problem Formulation -- 4 Permutation Synchronization -- 5 Partial Permutation Synchronization -- 6 Experiments -- 7 Conclusion -- References -- A Fully Convolutional Network for Salient Object Detection -- 1 Introduction -- 2 Proposed Method -- 2.1 Training -- 3 Experiments -- 3.1 Datasets -- 3.2 Data Augmentation -- 3.3 Evaluation Measures -- 3.4 Results -- 4 Conclusions -- References -- A Lightweight Mamdani Fuzzy Controller for Noise Removal on Iris Images -- 1 Introduction -- 2 The Proposed Algorithm -- 2.1 Iris Detection and Decomposition -- 2.2 The SKE Values -- 2.3 The Fuzzy Rules -- 3 Preliminary Results -- 4 Conclusions -- References -- Analysis of the Discriminative Generalized Hough Transform for Pedestrian Detection -- 1 Introduction -- 2 Methods -- 2.1 Structured Edge Detection -- 2.2 Discriminative Generalized Hough Transform -- 2.3 Rejection of Proposals -- 3 Experimental Setup -- 3.1 Databases -- 3.2 Experimental Setup and System Parameters -- 3.3 Comparison to State-of-the-Art Approaches -- 3.4 Evaluation Metrics -- 4 Results -- 4.1 SCM Rejection -- 4.2 SCM Rejection: Error Analysis -- 4.3 SCM Rejection: Oracle Experiments -- 4.4 CNN Rejection: Detection Results -- 5 Discussion -- 6 Conclusions -- References. Bubble Shape Identification and Calculation in Gas-Liquid Slug Flow Using Semi-automatic Image Segmentation -- 1 Introduction -- 2 Materials and Methods -- 2.1 Image Acquisition -- 2.2 Image Segmentation by Level Set Method -- 2.3 A Priori Shape Definition -- 2.4 Level Set Priori Shape Restrict - LSR -- 3 Proposed Scheme to Two-Phase Flow Image Segmentation -- 4 Experimental Results -- 4.1 Validation -- 4.2 Wire-Mesh Image Comparison and Grey Levels Images -- 4.3 Gas Bubbles Velocity -- 5 Conclusion -- References -- Deep Face Model Compression Using Entropy-Based Filter Selection -- 1 Introduction -- 2 Related Works -- 3 Entropy-Based Model Compression -- 3.1 Framework -- 3.2 Entropy-Based Prune Metric --

3.3 Network Trimming -- 4 Experiments -- 4.1 VGG-16 Network -- 4.2 WebFace Network -- 4.3 Effectiveness Analysis -- 5 Conclusion -- References -- Deep Passenger State Monitoring Using Viewpoint Warping -- 1 Introduction -- 2 Method -- 2.1 Image Alignment Using Homography -- 2.2 Synthesising Viewpoint Changes -- 2.3 Passenger State Classification -- 3 Experiments and Results -- 3.1 Dataset -- 3.2 Evaluation -- 3.3 Results -- 4 Conclusions -- References -- Demographic Classification Using Skin RGB Albedo Image Analysis -- 1 Introduction -- 1.1 Skin Anatomy -- 1.2 Skin Visual Perception -- 1.3 Skin Related Demographics -- 2 Related Work -- 2.1 Skin Classification Based on Skin Aging and Light Exposure -- 2.2 Light-Skin Interaction Prediction: BSSRDF -- 2.3 State of the Art Skin Models -- 3 Proposed Albedo Based Descriptor -- 3.1 RGB Albedo Descriptor -- 4 Demographic Classification Results and Analysis -- 4.1 Gender, Skin Type and Age Clustering -- 4.2 Gender, Skin Type and Age Classification -- 5 Conclusion -- References -- Discriminative Dictionary Design for Action Classification in Still Images -- 1 Introduction -- 2 Related Works.

2.1 Action Recognition from Still Images -- 2.2 Efficient Codebook Construction for Classification -- 3 Proposed Algorithm -- 3.1 Extraction of Local Features -- 3.2 Discriminative Dictionary Learning -- 3.3 Feature Encoding Using C⁰362C -- 3.4 Classification -- 4 Experimental Details -- 4.1 Dataset -- 4.2 Experimental Setup -- 4.3 Performance Evaluation -- 5 Conclusion -- References -- Enhanced Bags of Visual Words Representation Using Spatial Information -- 1 Introduction -- 2 Traffic Signs Recognition -- 2.1 Enhanced BoVW Using Spatial Information -- 2.2 Similarity Measure -- 3 Experiment Results -- 3.1 Performance of the Proposed Method -- 3.2 Comparisons with Other State-of-the-Art Methods -- 4 Conclusions -- References -- Exploiting Spatial Context in Nonlinear Mapping of Hyperspectral Image Data -- 1 Introduction -- 2 Methods -- 2.1 Dimensionality Reduction -- 2.2 Exploiting Spatial Context in Dimensionality Reduction -- 3 Experimental Study -- 3.1 Classification of Hyperspectral Image Data -- 3.2 Clustering and Segmentation of Hyperspectral Image Data -- 3.3 Visualization of Hyperspectral Image Data -- 4 Conclusion -- References -- Exploiting Visual Saliency Algorithms for Object-Based Attention: A New Color and Scale-Based Approach -- 1 Introduction -- 2 State of the Art -- 3 Proposed Methods -- 3.1 Eye Tracking Data Acquisition -- 3.2 Proposed Saliency Map Generation Method -- 4 Experimental Results -- 5 Conclusion and Future Works -- References -- Face Recognition with Single Training Sample per Subject -- 1 Introduction -- 2 Background of Local Binary Patterns -- 3 Overview of Proposed Approach -- 3.1 Offline Phase -- 3.2 Online Phase -- 3.3 Optimization and Classification -- 3.4 Parameter Setting -- 4 Experimental Results -- 4.1 The Experiments Comparison: FR on FRGCv1, OR, CK+, FEI and GT Databases -- 4.2 Running Time Comparison.

5 Conclusion -- References -- Food Recognition Using Fusion of Classifiers Based on CNNs -- 1 Introduction -- 2 Methodology -- 2.1 Training of CNN Models -- 2.2 Decision Templates for Classifiers Fusion -- 3 Experiments -- 3.1 Datasets -- 3.2 Experimental Setup -- 3.3 Data Preprocessing and Metrics -- 3.4 Experimental Results on Food-11 -- 3.5 Experimental Results on Food-101 -- 4 Conclusions -- References -- MR Brain Tissue Segmentation Based on Clustering Techniques and Neural Network -- 1 Introduction -- 2 Related Work -- 3 The Proposed Method -- 3.1 Training Phase -- 3.2 Testing Phase -- 4 Experimental Results -- 5 Conclusions -- References -- Multi-branch CNN for Multi-scale Age Estimation -- 1 Introduction -- 2 Related

Works -- 3 Multi-branch CNN -- 4 Experimental Results -- 5
Conclusions -- References -- No-Reference Learning-Based and
Human Visual-Based Image Quality Assessment Metric -- 1
Introduction -- 2 The LEVIQI Index -- 2.1 General Framework -- 2.2
Visual Sub-band Decomposition -- 2.3 Selected Features -- 3
Performance Evaluation -- 3.1 Experimental Setup -- 3.2 Experimental
Results -- 4 Conclusion -- References -- Performance Evaluation of
Multiscale Covariance Descriptor in Underwater Object Detection --
Abstract -- 1 Introduction -- 2 Autonomous Underwater Vehicle -- 3
Image Descriptors -- 3.1 Global Approach -- 3.2 Type of Descriptor --
3.3 Multiscale Covariance Descriptor -- 3.4 Support Vector Machine --
4 Experimental Result -- 4.1 Evaluation Metric -- 4.2 Maris Dataset --
4.3 Result -- 5 Conclusion -- References -- Retinal Vessel
Segmentation Through Denoising and Mathematical Morphology -- 1
Introduction -- 2 Dataset -- 3 Method -- 3.1 Denoising: Non-local
Means Algorithm -- 3.2 Mathematical Morphology: Black Top-Hat --
3.3 Image Thresholding -- 4 Experiments -- 5 Conclusions --
References.
Segmentation of Green Areas Using Bivariate Histograms Based in Hue-
Saturation Type Color Spaces.

Sommario/riassunto

The two-volume set LNCS 10484 and 10485 constitutes the refereed proceedings of the 19th International Conference on Image Analysis and Processing, ICIAP 2017, held in Catania, Italy, in September 2017. The 138 papers presented were carefully reviewed and selected from 229 submissions. The papers cover both classic and the most recent trends in image processing, computer vision, and pattern recognition, addressing both theoretical and applicative aspects. They are organized in the following topical sections: video analysis and understanding; pattern recognition and machine learning; multiview geometry and 3D computer vision; image analysis, detection and recognition; multimedia; biomedical and assistive technology; information forensics and security; imaging for cultural heritage and archaeology; and imaging solutions for improving the quality of life.
