CONTENTS

INVITED SPEAKERS

KEYNOTE SPEAKERS

Place-based Information Systems - Textual Location Identification and Visualization IS-5
Hanan Samet

ThinkBIG - Understanding the Impact of Big Data on Science and Society IS-7
Nello Cristianini

Towards a Holistic Theory of Pattern Recognition - A Game-theoretic Perspective IS-9
Marcello Pelillo

3D Computer Vision - From Points to Concepts IS-11
Luis Alexandre

APPLICATIONS

FULL PAPERS

A Hybrid BLSTM-HMM for Spotting Regular Expressions 5
Gautier Bideault, Luc Mioulet, Clement Chatelain and Thierry Paquet

A New Robust Color Descriptor for Face Detection 13
Eyal Braunstain and Isak Gath

Mobility Assessment of Demented People Using Pose Estimation and Movement Detection - An Experimental Study in the Field of Ambient Assisted Living 22
Julia Richter, Christian Wiede and Gangolf Hirtz

Increased Fall Detection Accuracy in an Accelerometer-based Algorithm Considering Residual Movement 30
Panagiotis Kostopoulos, Tiago Nunes, Kevin Salvi, Michel Deriaz and Julien Torrent

Towards Pose-free Tracking of Non-rigid Face using Synthetic Data 37
Ngoc-Trung Tran, Fakhreddine Ababsa and Maurice Charbit

3-D Shape Matching for Face Analysis and Recognition 45
Wei Quan, Bogdan Matuszewski and Lik-Kwan Shark

Fast Discovery of Discriminative Mid-level Patches 53
Angran Lin, Xuhui Jia and Kowk Ping Chan

Improvement of Recovering Shape from Endoscope Images Using RBF Neural Network 62
Yuji Iwahori, Seiya Tsuda, Robert J. Woodham, M. K. Bhuyan and Kunio Kasugai

3D Registration of Multi-modal Data Using Surface Fitting 71
Amine Mahiddine, Rabah Iguernaissi, Djamal Merad, Pierre Drap and Jean-marc Boï

Dismantling Composite Visualizations in the Scientific Literature 79
Po-Shen Lee and Bill Howe

Automatic Image Annotation Using Convex Deep Learning Models 92
Niharjyoti Sarangi and C. Chandra Sekhar

Multi-Object Segmentation for Assisted Image reConstruction
Sonia Caggiano, Maria De Marsico, Riccardo Distasi and Daniel Riccio 100

Short Papers

Speckled Images Segmentation and Algorithm Comparison
Luigi Cinque, Rossella Cossu and Rosa Maria Spitaleri 111

FOREST - A Flexible Object Recognition System
Julia Moehrmann and Gunther Heidemann 119

Combining Fisher Vectors in Image Retrieval Using Different Sampling Techniques
Tomás Mardones, Héctor Allende and Claudio Moraga 128

Automatic Tooth Identification in Dental Panoramic Images with Atlas-based Models
Selma Guzel, Ayse Betul Oktay and Kadir Tufan 136

Joint Under and Over Water Calibration of a Swimmer Tracking System
Sebastian Haner, Linus Svärm, Erik Ask and Anders Heyden 142

Plane Fitting and Depth Variance Based Upsampling for Noisy Depth Map from 3D-ToF Cameras in Real-time
Kazuki Matsumoto, Francois de Sorbier and Hideo Saito 150

Using Phase Congruency Model for Microaneurysms Detection in Fundus Image
Zhitao Xiao, Fang Zhang, Lei Geng, Jun Wu, Xinpeng Zhang, Long Su and Chunyan Shan 158

Automated Respiration Detection from Neonatal Video Data
Ninah Koolen, Olivier Decroupet, Anneleen Dereymaeker, Katrien Jansen, Jan Vervisch, Vladimir Matic, Bart Vanrumste, Gunnar Naulaers, Sabine Van Huffel and Maarten De Vos 164

Keyword based Keyframe Extraction in Online Video Collections
Edoardo Ardizzone, Marco La Cascia and Giuseppe Mazzola 170

Speaker Identification with Short Sequences of Speech Frames
Giorgio Biagetti, Paolo Crippa, Alessandro Curzi, Simone Orcioni and Claudio Turchetti 178

Privacy Aware Person-specific Assisting System for Home Environment
Ahmad Rabie and Uwe Handmann 186

An Online Vector Error Correction Model for Exchange Rates Forecasting
Paola Arce, Jonathan Antognini, Werner Kristjanpoller and Luis Salinas 193

Learning to Predict Video Saliency using Temporal Superpixels
Anurag Singh, Chee-Hung Henry Chu and Michael A. Pratt 201

Cooperative Gesture Recognition - Learning Characteristics of Classifiers and Navigating the User to an Ideal Situation
Hiromasa Yoshimoto and Yuichi Nakamura 210

Collaborative Tracking and Distributed Control for an IP-PTZ Camera Network
Pierrick Paillet, Romaric Audigier, Frédéric Lerasle and Quoc-Cuong Pham 219

Application of Face Verification in Automated Passenger Clearance System
Wentao Shen, Yicong Liang, Xiaoqing Ding and Changsong Liu 227

Gunshot Classification from Single-channel Audio Recordings using a Divide and Conquer Approach 233
Héctor A. Sánchez-Hevia, David Ayllón, Roberto Gil-Pita and Manuel Rosa-zurera

Fast Classification of Dust Particles from Shadows 241
Elio D. Di Claudio, Giovanni Jacovitti, Gianni Orlandi and Andrea Proietti

Voice Verification System for Mobile Devices based on ALIZE/LIA_RAL 248
Hussein Sharafeddin, Mageda Sharafeddin and Haitham Akkary

The Symmetry of Oligonucleotide Distance Distributions in the Human Genome 256
Ana Helena Tavares, Vera Afreixo, João M. O. S. Rodrigues and Carlos A. C. Bastos

Fast Regularized Least Squares and k-means Clustering Method for Intrusion Detection Systems 264
Parisa Movahedi, Paavo Nevalainen, Markus Viljanen and Tapio Pahikkala

Assessment of Dendritic Cell Therapy Effectiveness Based on the Feature Extraction from Scientific Publications 270
Alexey Yu. Lupatov, Alexander I. Panov, Roman E. Suvorov, Alexander V. Shvets, Konstantin N. Yarygin and Galina D. Volkova

A Fourth Order Tensor Statistical Model for Diffusion Weighted MRI - Application to Population Comparison 277
Theodosios Gkamas, Félix Renard, Christian Heinrich and Stéphane Kremer

Single-frame Image Denoising and Inpainting Using Gaussian Mixtures 283
Afonso Teodoro, Mariana Almeida and Mario Figueiredo

Interactive 3D Modeling - A Survey-based Perspective on Interactive 3D Reconstruction 289
Julius Schöning and Gunther Heidemann

Adaptive Traffic Signal Control of Bottleneck Subzone based on Grey Qualitative Reinforcement Learning Algorithm 295
Junping Xiang and Zonghai Chen

An Unsupervised Method for Suspicious Regions Detection in Mammogram Images 302
Marco Insalaco, Alessandro Bruno, Alfonso Farruggia, Salvatore Vitabile and Edoardo Ardizzone

Objective and Subjective Metrics for 3D Display Perception Evaluation 309
Andrea Albarelli, Luca Cosmo, Filippo Bergamasco and Andrea Gasparetto

Motion Field Regularization for Sliding Objects Using Global Linear Optimization 318
Gustaf Johansson, Mats Andersson and Hans Knutsson

Learning Dynamic Systems from Time-series Data - An Application to Gene Regulatory Networks 324
Ivo J. P. M. Timoteo and Sean B. Holden

Resilient Propagation for Multivariate Wind Power Prediction 333
Jannes Stubbemann, Nils Andre Treiber and Oliver Kramer

Estimation of Postoperative Knee Flexion at Initial Contact of Cerebral Palsy Children using Neural Networks 338
Omar A. Galarraga C., Vincent Vigneron, Bernadette Dorizzi, Néjib Khouri and Eric Desailly

Assessment of the Extent of the Necessary Clinical Testing of New Biotechnological Products Based on the Analysis of Scientific Publications and Clinical Trials Reports 343
Roman Suvorov, Ivan Smirnov, Konstantin Popov, Nikolay Yarygin and Konstantin Yarygin

Prosody based Automatic Classification of the Uses of French 'Oui' as Convinced or Unconvinced Uses 349
Abdenour Hacine-Gharbi, Mélanie Petit, Philippe Ravier and François Némo

Predicting Alzheimer's Disease - A Neuroimaging Study with 3D Convolutional Neural Networks 355
Adrien Payan and Giovanni Montana

AUTHOR INDEX 363