

Table of Contents

Kenote Addresses

Resilient Subclass Discriminant Analysis with Application to Prelens Tear Film Interferometry	1
<i>Kim L. Boyer and Dijia Wu</i>	
Context Sensitive Information: Model Validation by Information Theory	12
<i>Joachim M. Buhmann</i>	
Evolutionary Multi-Objective Optimization: Basic Concepts and Some Applications in Pattern Recognition	22
<i>Carlos A. Coello Coello</i>	

Pattern Recognition and Data Mining

Comparative Diagnostic Accuracy of Linear and Nonlinear Feature Extraction Methods in a Neuro-oncology Problem	34
<i>Raúl Cruz-Barbosa, David Bautista-Villavicencio, and Alfredo Vellido</i>	
Efficient Group of Permutants for Proximity Searching	42
<i>Karina Figueroa Mora, Rodrigo Paredes, and Roberto Rangel</i>	
Solving 3-Colouring via 2SAT	50
<i>Guillermo De Ita, César Bautista, and Luis C. Altamirano</i>	
Classifier Selection by Clustering	60
<i>Hamid Parvin, Behrouz Minaei-Bidgoli, and Hamideh Shahpar</i>	
Ensemble of Classifiers Based on Hard Instances	67
<i>Isis Bonet, Abdel Rodríguez, Ricardo Grau, and María M. García</i>	
Scalable Pattern Search Analysis	75
<i>Eric Sadit Tellez, Edgar Chavez, and Mario Graff</i>	
Application of Pattern Recognition Techniques to Hydrogeological Modeling of Mature Oilfields	85
<i>Leonid Sheremetov, Ana Cosultchi, Ildar Batyrshin, and Jorge Velasco-Hernandez</i>	
On Trend Association Analysis of Time Series of Atmospheric Pollutants and Meteorological Variables in Mexico City Metropolitan Area	95
<i>Victor Almanza and Ildar Batyrshin</i>	

Associative Memory Approach for the Diagnosis of Parkinson's Disease	103
<i>Elena Acevedo, Antonio Acevedo, and Federico Felipe</i>	

Computer Vision and Robotics

Thermal Video Analysis for Fire Detection Using Shape Regularity and Intensity Saturation Features	118
<i>Mario I. Chacon-Murguía and Francisco J. Perez-Vargas</i>	
People Detection Using Color and Depth Images	127
<i>Joaquín Salas and Carlo Tomasi</i>	
Measuring Rectangularity Using GR-Signature.....	136
<i>Jihen Hentati, Mohamed Naouai, Atef Hamouda, and Christiane Weber</i>	
Multi-modal 3D Image Registration Based on Estimation of Non-rigid Deformation.....	146
<i>Roberto Rosas-Romero, Oleg Starostenko, Jorge Rodríguez-Asomoza, and Vicente Alarcon-Aquino</i>	
Performance of Correlation Filters in Facial Recognition	155
<i>Everardo Santiago-Ramirez, J.A. Gonzalez-Fraga, and J.I. Ascencio-Lopez</i>	
Evaluation of Binarization Algorithms for Camera-Based Devices	164
<i>M. Nava-Ortiz, W. Gómez-Flores, A. Díaz-Pérez, and G. Toscano-Pulido</i>	
A Hybrid Approach for Pap-Smear Cell Nucleus Extraction	174
<i>M. Orozco-Monteagudo, Hichem Sahli, Cosmin Mihai, and A. Taboada-Crispi</i>	

Image Processing

Segmentation of Noisy Images Using the Rank M-Type L-Filter and the Fuzzy C-Means Clustering Algorithm	184
<i>Dante Mújica-Vargas, Francisco J. Gallegos-Funes, and Rene Cruz-Santiago</i>	
Design of Correlation Filters for Pattern Recognition Using a Noisy Training Image	194
<i>Pablo M. Aguilar-González and Vitaly Kober</i>	
Image Fusion Algorithm Using the Multiresolution Directional-Oriented Hermite Transform	202
<i>Sonia Cruz-Techica and Boris Escalante-Ramírez</i>	

Normalized Cut Based Edge Detection	211
<i>Mario Barrientos and Humberto Madrid</i>	
Homogeneity Cues for Texel Size Estimation of Periodic and Near-Periodic Textures	220
<i>Rocio A. Lizarraga-Morales, Raul E. Sanchez-Yanez, and Victor Ayala-Ramirez</i>	
Adaptive Thresholding Methods for Documents Image Binarization	230
<i>Bilal Bataineh, Siti N.H.S. Abdullah, K. Omar, and M. Faidzul</i>	
Foveated ROI Compression with Hierarchical Trees for Real-Time Video Transmission	240
<i>J.C. Galan-Hernandez, V. Alarcon-Aquino, O. Starostenko, and J.M. Ramirez-Cortes</i>	
Neural Networks and Signal Processing	
Neural Networks to Guide the Selection of Heuristics within Constraint Satisfaction Problems	250
<i>José Carlos Ortiz-Bayliss, Hugo Terashima-Marín, and Santiago Enrique Conant-Pablos</i>	
Microcalcifications Detection Using PFCM and ANN	260
<i>A. Vega-Corona, J. Quintanilla-Domínguez, B. Ojeda-Magaña, M.G. Cortina-Januchs, A. Marcano-Cedeño, R. Ruelas, and D. Andina</i>	
Software Development Effort Estimation in Academic Environments Applying a General Regression Neural Network Involving Size and People Factors	269
<i>Cuauhtémoc López-Martín, Arturo Chavoya, and M.E. Meda-Campaña</i>	
An Ensemble of Degraded Neural Networks	278
<i>Eduardo Vázquez-Santacruz and Debrup Chakraborty</i>	
Genetic Fuzzy Relational Neural Network for Infant Cry Classification	288
<i>Alejandro Rosales-Pérez, Carlos A. Reyes-García, and Pilar Gómez-Gil</i>	
Speech Compression Based on Frequency Warped Cepstrum and Wavelet Analysis	297
<i>Francisco J. Ayala and Abel Herrera</i>	

Dust Storm Detection Using a Neural Network with Uncertainty and Ambiguity Output Analysis	305
<i>Mario I. Chacon-Murguía, Yearim Quezada-Holguín, Pablo Rivas-Perea, and Sergio Cabrera</i>	
Extraction of Buildings Footprint from LiDAR Altimetry Data with the Hermite Transform	314
<i>José Luis Silván-Cárdenas and Le Wang</i>	
Natural Language and Document Processing	
Automatic Acquisition of Synonyms of Verbs from an Explanatory Dictionary Using Hyponym and Hyperonym Relations	322
<i>Noé Alejandro Castro-Sánchez and Grigori Sidorov</i>	
Using Finite State Models for the Integration of Hierarchical LMs into ASR Systems	332
<i>Raquel Justo and M. Inés Torres</i>	
Use of Elliptic Curves in Term Discrimination	341
<i>Darnes Vilarinho, David Pinto, Carlos Balderas, Mireya Tovar, Beatriz Beltrán, and Sofía Paniagua</i>	
Author Index	351