

2017 International Conference and Workshop on Bioinspired Intelligence (IWobi 2017)

Funchal, Portugal
10 – 12 July 2017



IEEE Catalog Number: CFP1799Z-POD
ISBN: 978-1-5386-0851-7

**Copyright © 2017 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP1799Z-POD
ISBN (Print-On-Demand):	978-1-5386-0851-7
ISBN (Online):	978-1-5386-0850-0

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

Table of Papers

Cognitively Inspired Artificial Bipedal Humanoid Gait Generation. R. Kuteken, R. Batista and J. Rosário	1
Personal identification using forearm vein patterns. R.S. Choras	7
Covariate Analysis of Descriptor-Based Ear Recognition Techniques. Ž. Emeršič, B. Meden, P. Peer and V. Struc	12
k-Same-Net: Neural-Network-based face deidentification. B. Meden, Ž. Emeršič, V. Štruc and P. Peer.	21
Articulation Acoustic Kinematics in ALS Speech: A longitudinal study case. P. Gómez-Vilda, A.R. Londral, D. Palacios-Alonso, A. Gómez-Rodellar and V. Rodellar	28
A Method for Designing EMG Integrator using an FPGA. Sheikh S. Mostafa, Md.A. Awal, M. Ahmad and F. Morgado-Dias.	34
A Minimally Invasive Portable System for Sleep Apnea Detection. F. Mendonça, S. Mostafa, F. Morgado-Dias, J. Navarro-Mesa, G. Juliá-Serdá and A. Ravelo-García.	40
Voice Pathology Detection Using Deep Learning: a Preliminary Study. P. Harar, J.B. Alonso-Hernandez, J. Mekyska, Z. Galaz, R. Burget and Z. Smekal.	45
Analysis of disfluencies for automatic detection of Mild Cognitive Impairment: a deep learning approach K. López de Ipiña, U. Martínez de Lizarduy, P. Calvo, B. Beita, J. García-Melero, M. Ecay-Torres, A. Estanga and M. Faúndez-Zanuy.	49
Automated classification of exudates from digital fundus images. R.S. Rekhi, A. Issac, M.K. Dutta and C.M. Travieso.	53

Analysis of Heart Sound for Automated Diagnosis of Cardiac Disorders.	59
A. Singh, M.K. Dutta and C.M. Travieso.	
Automatic Image Processing Based Dental Image Analysis Using Automatic Gaussian Fitting Energy and Level Sets.	64
P. Pandey, A. Bhan, M.K. Dutta and C.M. Travieso	
Automatic event handling during robot assisted eye surgery	69
M. Kozlovszky, R. Dóczsi, E. Jósvai and G. Kronreif.	
Automatic Identification of Botanical Samples of leaves using Computer Vision.	74
A. Yadav, M.K. Dutta, C.M. Travieso and J.B. Alonso.	
Hybrid mathematical modeling decodes the complexity of sphingolipid pathway to predict chemosensitivity.	80
J.A. Molina-Mora, M. Kop-Montero, J.L. Crespo-Mariño, S. Quirós-Barrantes and R. Mora-Rodriguez.	
Approach of Kinematic Control for a Nonholonomic Wheeled Robot using Artificial Neural Networks and Genetic Algorithms	86
Inês Sampaio, C.A. Cáceres-Flórez, J.M. Rosário and D. Amaya.	
Impact of target variable distribution type over the regression analysis in Wind Turbine data.	92
A. Blanco-Martinez, J. Solé-Casals, P. Martí-Puig, J.J. Cárdenas and J. Cusidó	
Image Reconstruction of the Human Forearm by Electrical Impedance Tomography.	99
M. Vílchez-Monge, D. Canales and R. Rimolo-Donadio.	
Assessment of the spectral quality of fused images using the CIEDE2000 distance	105
D. Rodriguez-Esparragón, J. Marcello, F. Eugenio-González, A.M. García-Pedrero and C. Gonzalo-Martin.	

A superpixel-based approach based on consensus for delineating agricultural plots. A.M. Garcia-Pedrero, C. Gonzalo-Martin, M. Lillo-Saavedra and D. Rodriguez-Esparragon.	109
Delineation of line patterns in images using B-COSFIRE filters. N. Strisciuglio and N. Petkov.	115
Medium and High-dimensionality attribute selection in Bayes-type classifiers. A.J. Tallón-Ballesteros and L. Correia.	121
Automated Segmentation of Powdery Mildew disease from Cherry Leaves using Image Processing. V. Gupta, N. Sengar, M.K. Dutta, C.M. Travieso and J.B. Alonso	
Control Architecture to Reproduce the Knee and Ankle Movement using a Transfemoral Prosthesis J.F. Puerta-Barrera, J.M. Rosário and D. Amaya-Hurtado.	131
Fundamentals of Indoor VLP: Providing Autonomous Mobility for Visually Impaired People. R. Perez, J. Rabadán, V. Guerra, L. Aguiar and J. Rufo.	141
Evaluation of Different Histogram Distances for Temporal Segmentation in Digital Videos of Football Matches from TV Broadcast. R. Chacon-Quesada and F. Siles-Canales.	147
Shannon entropy of a European seabass (<i>Dicentrarchus Labrax</i>) system in response to feed polluted with different concentrations of MeHg: a machine vision approach H.Z Eguiraun, O. Casquero and I. Martinez	154
Alternative low cost algorithms for metabolic pathway comparison E. Arias-Méndez and F. Torres-Rojas	158
Authors' Index	164