SIGNAL 2017
The Second International Conference on Advances in Signal, Image and Video Processing

May 21 - 25, 2017
Barcelona, Spain

SIGNAL 2017 Editors
Claus-Peter Rückemann, Leibniz Universität Hannover / WWU Münster / North-German Supercomputing Alliance (HLRN), Germany
Ramiro Sámano Robles, CISTER Research Centre, ISEP - Instituto Superior de Engenharia do Porto – Porto, Portugal
Antonio J. R. Neves, University of Aveiro, Portugal
TABLE OF CONTENTS

SIGNAL 1: SIGNAL PROCESSING

Chan-Vese Model with Semi-Implicite AOS Scheme for Images Segmentation: Biphase and Multiphase Cases ............................................................................................................................. 1
   M. Zahir, B. Hemza, Y. Arezki
Principal Fiber Bundles and Geometry of Color Spaces ................................................................. 6
   E. Provenzi
A Low Cost Technology-based Device for Breath Analysis and Self-monitoring ............................... 8
   D. Germanese, M. D’Acunto, M. Magrini, M. Righi, O. Salvetti

SIGNAL 2: IMAGE AND VIDEO PROCESSING

A Novel Location and Neighborhood Adaptive Method for Binary Image Interpolation ....................... 14
   P. Prabhakaran, P. Poonacha
Robust Object Tracking Using Unreliable Object Recognizers ........................................................ 21
   L. Li, M. Mortazavi
InVideo: An Automatic Video Index and Search Engine for Large Video Collections .......................... 27
   S. Wang, C. Maher, X. Cheng, W. Kelly

SIGNAL 3 / SIVPR: TIME-CONSTRAINED SIGNAL, IMAGE AND VIDEO PROCESSING IN ROBOTICS

Vehicle Detection on Low Altitude Images Based on Edge Density .................................................. 33
   A. Neves, M. Camarneiro, L. Cozinheiro
Face Detection on Infrared Thermal Image .......................................................................................... 38
   R. Ribeiro, J. Fernandes, A. Neves

SIGNAL 4 / 5GsigWave: SIGNAL PROCESSING FOR DECENTRALIZED, COGNITIVE AND SELF-ORGANISED 5G WIRELESS ACCESS NETWORK

Transmit Beamforming Strategies with Iterative Equalization for Hybrid mmW Systems ..................... 43
   R. Magueta, D. Castanheira, A. Silva, A. Gameiro, R. Dinis
Secure Video Multicast over Wireless Ad-hoc Networks using Network Coding .............................. 49
   D. Yang, V. Monteiro, J. Rodriguez, T. Dagiuklas, C. Mysirlidis
Joint Beamforming, Terminal Scheduling, and Adaptive Modulation with Imperfect CSIT in Rayleigh Fading Correlated Channels with Co-channel Interference ........................................... 54
   R. Samano-Robles
Stability and Delay of Network-Diversity Multiple Access with Backlog Retransmission Control ........... 62
   R. Samano-Robles

Author Index