2014 International Conference on Signal Processing and Multimedia Applications (SIGMAP 2014)

Vienna, Austria
28-30 August 2014
# CONTENTS

## INVITED SPEAKERS

**KEYNOTE SPEAKERS**

- A Need-based Assessment for Building a National Cyber Security Workforce
  *Seymour Goodman*  
  IS-5

- Democratization in Science and Technology through Cloud Computing
  *Ivona Brandić*  
  IS-7

- Model-driven Development of Multi-View Modelling Tools - The MUVIEMOT Approach
  *Dimitris Karagiannis*  
  IS-9

- Social Business Intelligence - OLAP Applied to User Generated Contents
  *Matteo Golfarelli*  
  IS-11

- Advanced Persistent Threats & Social Engineering
  *Edgar Weippl*  
  IS-13

## MULTIMEDIA AND COMMUNICATIONS

### FULL PAPER

- Noise Mitigation over Powerline Communication Using LDPC-Convolutional Code and Fusion of Mean and Median Filters
  *Yassine Himeur and Abdelkrim Boukabou*  
  5

### SHORT PAPERS

- Product Integral Binding Coefficients for High-order Wavelets
  *Nick Michiels, Jeroen Put and Philippe Bekaert*  
  17

- Combining Top-down and Bottom-up Visual Saliency for Firearms Localization
  *Edoardo Ardizzone, Roberto Gallea, Marco La Cascia and Giuseppe Mazzola*  
  25

- Protecting Digital Fingerprint in Automated Fingerprint Identification System using Local Binary Pattern Operator
  *Ait Sadi Karima, Bouchair Imène, K. Zebbiche and Moussadek Laadjiel*  
  33

- A Fast and Robust Key-Frames based Video Copy Detection Using BSIF-RMI
  *Yassine Himeur, Karima Ait-Sadi and Abdelmalik Oumamne*  
  40

- Auditory Features Analysis for BIC-based Audio Segmentation
  *Tomasz Maka*  
  48

- Efficient Rate Control for Intra-Frame Coding in High Efficiency Video Coding
  *Feng Cen, Qianli Lu and Weisheng Xu*  
  54

- Image Stitching with Efficient Brightness Fusion and Automatic Content Awareness
  *Yu Tang and Jungpil Shin*  
  60

- Towards a Wake-up and Synchronization Mechanism for Multiscreen Applications using iBeacon
  *Louay Bassbouss, Görkem Güçlü and Stephan Steglich*  
  67
Smoothed Surface Transitions for Human Motion Synthesis  
Ashish Doshi

MULTIMEDIA SIGNAL PROCESSING

FULL PAPERS

Clothes Change Detection Using the Kinect Sensor  
Dimitris Sgouropoulos, Theodoros Giannakopoulos, Sergios Petridis, Stavros Perantons and Antonis Korakis

A Multi-Threaded Full-feature HEVC Encoder Based on Wavefront Parallel Processing  
Stefan Radicke, Jens-Uwe Hahn, Christos Grecos and Qi Wang

Three-stage Unstructured Filter for Removing Mixed Gaussian plus Random Impulse Noise  
Fitri Utaminingrum, Keiichi Uchimura and Gou Koutaki

Self-calibration of Large Scale Camera Networks  
Patrik Goorts, Steven Maesen, Yanjun Liu, Maarten Dumont, Philippe Bekaert and Gauthier Lafraire

Real-time Local Stereo Matching Using Edge Sensitive Adaptive Windows  
Maarten Dumont, Patrik Goorts, Steven Maesen, Philippe Bekaert and Gauthier Lafraire

Evaluation of Acoustic Feedback Cancellation - Methods with Multiple Feedback Paths  
Bruno Bispo and Diamantino Freitas

SHORT PAPERS

Computational Complexity Analysis of the Graph Extraction Algorithm for Volumetric Segmentation Method  
Dumitru Dan Burdescu, Liana Stanescu, Marius Brezovan and Cosmin Stoica Spahiu

Real-time Super Resolution Equipment for 8K Video  
Seiichi Gohshi

Basic Concept of Cuckoo Search Algorithm for 2D Images Processing with Some Research Results - An Idea to Apply Cuckoo Search Algorithm in 2D Images Key-points Search  
Marcin Wozniak and Dawid Polap

Methods and Algorithms of Cluster Analysis in the Mining Industry - Solution of Tasks for Mineral Rocks Recognition  
Olga Baklanova and Olga Ya Shvets

Lip Tracking Using Particle Filter and Geometric Model for Visual Speech Recognition  
Islem Jarraya, Salah Werda and Walid Mahdi

3D Dual-Tree Discrete Wavelet Transform Based Multiple Description Video Coding  
Jing Chen, Canhui Cai and Li Li

Image Enhancement for Hand Sign Detection  
Jing-Wein Wang, Tzu-Hsiung Chen and Tsong-Yi Chen

Gabor Fused to 2DPCA for Face Recognition  
Faten Bellakhdhar, Kais Loukil and Mohamed Abid

Visual Attention in Edited Dynamical Images  
Ulrich Ansorge, Shelley Buchinger, Christian Valuch, Aniello Raffaele Patrone and Otmar Scherzer
Comparison of Adaptive Filters for Wavelet Generation
A. Gayathri, M. S. Sinith and S. Chithra

An Integrated Approach for Efficient Analysis of Facial Expressions
Mehdi Ghayoumi and Arvind K. Bansal

Image Denoising Algorithm with a Three-dimensional Grid System of Coupled Nonlinear Elements
Atsushi Nomura, Yoshiki Mizukami and Koichi Okada

MULTIMEDIA SYSTEMS AND APPLICATIONS

FULL PAPER
An Application Supporting Gastroesophageal Multichannel Intraluminal Impedance-pH Analysis
Piotr Tojza, Dawid Gradolewski and Grzegorz Redlarski

SHORT PAPERS
Design and Implementation of a Driver Drowsiness Detection System - A Practical Approach
Aleksandar Čolić, Oge Marques and Borko Furht

Image Display System Using Bamboo-blind Type Screen that Can Discharge Smell
Keisuke TOMONO, Rei SHU, Mana TANAKA and Akira TOMONO

HMM-based Breath and Filled Pauses Elimination in ASR
Piotr Żelasko, Tomasz Jadczyk and Bartosz Ziółko

Food Image Presentation System that Discharge Smell Through Screen and Psychological Effect
Akira Tomono, Mana Tanaka, Rei Shu and Keisuke Tomono

Hierarchical Optimization Using Hierarchical Multi-competitive Genetic Algorithm and its Application to Multiple Vehicle Routing Problem
Shudai Ishikawa, Ryosuke Kubota and Keiichi Horio

Home Position Recognition Methods Using Polarizing Films for an Eye-gaze Interface System
Kohichi Ogata, Kensuke Sakamoto and Shingo Niino

Automatic Letter/Pillarbox Detection for Optimized Display of Digital TV
Lúcia Carreira and Maria Paula Queluz

A Multimedia Tracing Traitors Scheme Using Multi-level Hierarchical Structure for Tardos Fingerprint Based Audio Watermarking
Faten Chaabane, Maha Charfeddine and Chokri Ben Amar

Why Using the Alpha-stable Distribution in Neuroimage?
Diego Salas-Gonzalez, Juan M. Górriz, Javier Ramírez and Elmar W. Lang

Gender Classification Using M-Estimator Based Radial Basis Function Neural Network
Chien-Cheng Lee
SPECIAL SESSION ON MULTIMODAL SECURITY AND SURVEILLANCE ANALYTICS

FULL PAPERS

MOSAIC - Multimodal Analytics for the Protection of Critical Assets
Atta Badii, Marco Tiemann, Richard Adderley, Patrick Seidler, Rubén Heras Evangelio, Tobias Senst,
Thomas Sikora, Luca Panattoni, Matteo Raffaelli, Matthew Cappel-Porter, Zsolt L. Husz, Thomas Hecker
and Ines Peters

A Multi-configuration Part-based Person Detector
Alvaro Garcia-Martin, Ruben Heras Evangelio and Thomas Sikora

GIS-supported People Tracking Re-acquisition in a Multi-camera Environment
Anastasios Dimou, Vasileios Lovatsis, Andreas Papadakis, Stelios Pantelopoulos and Petros Daras

SHORT PAPERS

Data Integration, Semantic Data Representation and Decision Support for Situational Awareness
in Protection of Critical Assets
Atta Badii, Marco Tiemann and Daniel Thiemert

Multimedia Analysis of Video Sources
Juan Arraiza Irujo, Montse Cuadros, Naiara Aginako, Matteo Raffaelli, Olga Kaehm, Naser Damer and
Joao P. Neto

AUTHOR INDEX

311
321
329
341
346
353