

## PATTERNS 2018

The Tenth International Conferences on Pervasive Patterns and Applications

February 18 - 22, 2018

Barcelona, Spain

## **PATTERNS 2018 Editors**

Herwig Mannaert, University of Antwerp, Belgium Christian Kohls, TH Köln, Germany Yuji Iwahori, Chubu University, Japan Hiroyasu Usami, Chubu University, Japan Peter De Bruyn, University of Antwerp, Belgium Printed from e-media with permission by:

Curran Associates, Inc. 57 Morehouse Lane Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (423: ) by International Academy, Research, and Industry Association (IARIA) Please refer to the Copyright Information page.

Printed by Curran Associates, Inc. (423:)

International Academy, Research, and Industry Association (IARIA) 412 Derby Way Wilmington, DE 19810

Phone: (408) 893-6407 Fax: (408) 527-6351

petre@iaria.org

## 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 Email: curran@proceedings.com Web: www.proceedings.com

## **Table of Contents**

Improving Speech Emotion Recognition Based on ToBI Phonological Representation Lingjie Shen and Wei Wang	1
How an Optimized DB-SCAN Implementation Reduces Execution Time and Memory Requirements for Large Data Sets	6
Ole Kristian Ekseth and Svein-Olaf Hvasshovd	
Finding and Implementing Patterns for Creative Spaces Christian Kohls	12
Automatic Construction of Image Data Set Using Query Expansion Based on Tag Information Yuki Mizoguchi, Takahiro Yoshimura, Yuji Iwahori, and Ryosuke Yamanishi	18
Automatic Construction of Large Scale Image Data Set from Web Using Ontology and Deep Learning Model Takahiro Yoshimura, Yuki Mizoguchi, Yuji Iwahori, and Ryosuke Yamanishi	21
Colon Blood Vessel Detection Based on U-net Hiroyasu Usami, Yuji Iwahori, Naotaka Ogasawara, and Kunio Kasugai	23
Control Transition Interfaces in Level 3 Automated Vehicles: Four Preliminary Design Patterns Alexander G. Mirnig and Manfred Tscheligi	25
Massively Parallel Optical Flow using Distributed Local Search Abdelkhalek Mansouri, Jean-Charles Creput, Fabrice Lauri, and Hongjian Wang	31
Improved Gas Detection Algorithm for FTIR-Based Hyperspectral Imaging System Using Normalized Matched Filter	37
Hyeong-Geun Yu, Jae-Hoon Lee, Dong-Jo Park, Hyeon-Woo Nam, and Byeong-Hwang Park	
Evolvable Documents – an Initial Conceptualization Marek Suchanek and Robert Pergl	39
On the Variability Dimensions of Normalized Systems Applications: Experiences from an Educational Case Study <i>Peter De Bruyn, Herwig Mannaert, and Philip Huysmans</i>	45
On the Evolvability of Code Generation Patterns: The Case of the Normalized Systems Workflow Element Herwig Mannaert, Peter De Bruyn, Koen De Cock, and Tim Van Waes	51