



# **PATTERNS 2020**

The Twelfth International Conferences on Pervasive Patterns and Applications

October 25 - 29, 2020

## **PATTERNS 2020 Editors**

Herwig Mannaert, University of Antwerp, Belgium  
Ida Pu, Goldsmiths College, University of London, UK  
Jacqueline Daykin, Aberystwyth University, UK

**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© (2020) by International Academy, Research, and Industry Association (IARIA)  
Please refer to the Copyright Information page.

Printed with permission by Curran Associates, Inc. (2020)

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

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

[petre@iaria.org](mailto: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](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

## Table of Contents

Diffusion Patterns of Social Network Posts <i>Alexander Gubanov, Yuliya Mundrievskaya, and Ida M. Pu</i>	1
Concepts for Computing Patterns in 15th Century Korean Music <i>Sukhie Moon, Jacqueline W. Daykin, and Ida M. Pu</i>	6
Spambots: Creative Deception <i>Hayam Alamro and Costas S. Iliopoulos</i>	12
Evolvability Analysis of Multiple Inheritance and Method Resolution Order in Python <i>Marek Suchanek and Robert Perci</i>	19
On Evolvability Issues of Robotic Process Automation (RPA) <i>Geert Haerens and Her Mannaert</i>	25
Exploring the Application of Ontologies in Organizations for Data Harmonization <i>Carlos Tubbax and Jan Verelst</i>	33
Pattern-based Deployment Models Revisited: Automated Pattern-driven Deployment Configuration <i>Lukas Harzenetter, Uwe Breitenbucher, Michael Falkenthal, Jasmin Guth, and Frank Leymann</i>	40
Efficiently Detecting Disguised Web Spambots (with Mismatches) in a Temporally Annotated Sequence <i>Hayam Alamro and Costas S. Iliopoulos</i>	50
Analysis of Spatiotemporal Patterns of Changes in Brightness of Nighttime Lights (NTL) in the Former USSR Territory <i>Michail Zhizhin, Alexey Poyda, Alexander Troussov, and Sergey Maruev</i>	58
Reliability Displays in Building Information Modeling: A Pattern Approach <i>Alexander G. Mirnig, Peter Frohlich, Johann Schrammel, Damiano Falcioni, Michael Gafert, and Manfred Tscheligi</i>	63