14th International Joint Conference on Knowledge Discovery, Knowledge Engineering and Knowledge Management (IC3K 2022)

Volume 2: KEOD

Valletta, Malta
24 – 26 October 2022

Editors:

David Aveiro
Jan Dietz
Joaquim Filipe

ISBN: 978-1-7138-6400-4

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© (2022) by SCITEPRESS – Science and Technology Publications, Lda.
All rights reserved.

Printed with permission by Curran Associates, Inc. (2023)

For permission requests, please contact SCITEPRESS – Science and Technology Publications, Lda. at the address below.

SCITEPRESS – Science and Technology Publications, Lda.
Avenida de S. Francisco Xavier, Lote 7 Cv. C,
2900-616 Setúbal, Portugal

Phone: +351 265 520 185
Fax: +351 265520 186

info@scitepress.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

CONTENTS

INVITED SPEAKERS

KEYNOTE SPEAKERS

Relations, Events, and Explanation 5
Giancarlo Guizzardi

Self-Reflective Hybrid Intelligence: Combining Human with Artificial Intelligence and Logic 7
Catholijn Jonker

Probabilistic Graphical Models: On Reasoning, Learning, and Revision (Extended Abstract) 9
Rudolf Kruse

INVITED LECTURES

International Expert Mapping 13
Bart Verheijen

PAPERS

FULL PAPERS

Evaluation of a System for Named Entity Recognition in a Knowledge Management Ecosystem 19
Florian Freund, Philippe Tamla, Matthias Hemmje and Paul Mc Kevitt

Knowledge Graph-based Product Recommendations on e-Commerce Platforms 32
André Gomes Regino, Rodrigo Oliveira Caus, Victor Hochgreb and Julio Cesar Dos Reis

Inferring New Information from a Knowledge Graph in Crisis Management: A Case Study 43
Julie Bu Daher, Tom Huygue, Nathalie Hernandez and Patricia Stolf

QART: A Framework to Transform Natural Language Questions and Answers into RDF Triples 55
André Gomes Regino, Rodrigo Oliveira Caus, Victor Hochgreb and Julio Cesar Dos Reis

An Ontology for Data Regulation 66
Guillaume Delorme, Guilaine Talens and Eric Disson

Toward Building a Bilingual Dictionary for Libyan Dialect-modern Standard Arabic Machine Translation 75
Husien Alhammi and Kais Haddar

Debunking the Stereotypical Ontology Development Process 82
Achim Reiz and Kurt Sandkuhl

A System to Correct Toxic Expression with BERT 92
Motonobu Yoshida, Kazuyuki Matsumoto, Minoru Yoshida and Kenji Kita

SHORT PAPERS

Named Entity Recognition for the Extraction of Emerging Technological Knowledge from Medical Literature 101
Sabrina Lamberth-Cocca, Bernhard Maier, Christian Nawroth, Paul Mc Kevitt and Matthias Hemmje

Ontological View-driven Intensional Semantic Integration for Information Systems in a Decentralized Environment 109
Fateh Mohamed Ali Adhnouss, Husam M. Ali El-Asfour, Kenneth McIsaac, Idris El-Feghia, Raafat Aburukba and AbdulMutalib Wahaishi

Towards a Unified Multilingual Ontology for Rhetorical Figures 117
Yetian Wang, Ramona Kühn, Randy Allen Harris, Jelena Mitrović and Michael Granitzer

Building Eurostat Knowledge Graph 128
Alexandros Vassiliades, Nick Bassiliades, Georgios Meditskos and Kimon Spiliopoulos

Enterprise Transformation within Enterprise Engineering: Literature Review and Research Directions 136
Shoji Konno and Junichi Iijima

Knowledge Integration for Commonsense Reasoning with Default Logic 148
Priit Järv, Tanel Tammet, Martin Verrev and Dirk Draheim

Comparing Arguments in Discussions of Two Parliaments 156
Mare Koit

Large Class Arabic Sign Language Recognition 165
Zakia Saadaoui, Rakia Saidi and Fethi Jarray

Situational Question Answering using Memory Nets 169
Joerg Deigmoeller, Pavel Smirnov, Viktor Losing, Chao Wang, Johane Takeuchi and Julian Eggert

Evaluating and Exploring Text Fields Information Extraction into CIDOC-CRM 177
Davide Varagnolo, Guilherme Antas, Mariana Ramos, Sara Amaral, Dora Melo and Irene Pimenta Rodrigues

Knowledge Capture for the Design of a Technology Assessment Tool 185
Daniela Oliveira and Kimiz Dalkir

An Ontology for Ontology Metrics: Creating a Shared Understanding of Measurable Attributes for Humans and Machines 193
Achim Reiz and Kurt Sandkuhl

Ontology-based Representation of Digital Devices Used in Educational Guidance 200
Marie Gribouval, Cecilia Zanni-Merk and Davy Monticolo

Trustworthy Intelligent Systems: An Ontological Model 207
J. I. Olszewska

Extracting Business Insights through Dynamic Topic Modeling and NER 215
Muhammad Arslan and Christophe Cruz

Genetic Algorithm and Latent Semantic Analysis based Documents Summarization Technique 223
Imen Tanfouri and Fethi Jarray

GLUON: A Reasoning-based and Natural Language Generation-based System to Explicit Ontology Design Choices 228
Zakaria Mejdoul and Gaëlle Lortal

Simulation Model Validation based on Ontological Engineering Methods 237
Elena Zamyatina, Denis Churin, Viacheslav Lanin, Lyudmila Lyadova and Nada Matta

A Text Similarity Study: Understanding How Differently Greek News Media Describe News Events 245
Nikos Kapellas and Sarantos Kapidakis

Emotional States Management for an Advanced Intelligent Tutoring System 253
Domenico Redavid, Stefano Ferilli, Liza Loop and Liudmyla Matviichuk

Ontology for a Georeferencing Mobile System for Real Time Detection and Monitoring of Wildfires 260
Dulce Pacheco, David Aveiro, Valentim Caires and Duarte Pinto

AUTHOR INDEX 269