

Preface

The present book includes extended and revised versions of a set of selected papers from the 7th International Joint Conference on Knowledge Discovery, Knowledge Engineering and Knowledge Management (IC3K 2015), held in Lisbon, Portugal, during November 12–14, 2015. IC3K was sponsored by the Institute for Systems and Technologies of Information, Control and Communication (INSTICC) and was organized in cooperation with the AAI (Association for the Advancement of Artificial Intelligence), ACM SIGMIS (ACM Special Interest Group on Management Information Systems), ACM SIGAI (ACM Special Interest Group on Artificial Intelligence) Associazione Italiana per l'Intelligenza Artificiale, APPIA (Portuguese Association for Artificial Intelligence) and ERCIM (European Research Consortium for Informatics and Mathematics) and technically co-sponsored by IEEE CS – TCBIS – IEEE Technical Committee on Business Informatics and Systems.

The main objective of IC3K is to provide a point of contact for scientists, engineers, and practitioners interested in the areas of knowledge discovery, knowledge engineering, and knowledge management.

IC3K is composed of three co-located complementary conferences, each specialized in one of the aforementioned main knowledge areas, namely: the International Conference on Knowledge Discovery and Information Retrieval (KDIR), the International Conference on Knowledge Engineering and Ontology Development (KEOD), and the International Conference on Knowledge Management and Information Sharing (KMIS)

The International Conference on Knowledge Discovery and Information Retrieval (KDIR) aims to provide a major forum for the scientific and technical advancement of knowledge discovery and information retrieval. Knowledge discovery is an interdisciplinary area focusing on methodologies for identifying valid, novel, potentially useful, and meaningful patterns from data, often based on underlying large data sets. A major aspect of knowledge discovery is data mining, i.e., applying data analysis and discovery algorithms that produce a particular enumeration of patterns (or models) over the data. Knowledge discovery also includes the evaluation of patterns and identification of which add to knowledge. Information retrieval (IR) is concerned with gathering relevant information from unstructured and semantically fuzzy data in texts and other media, searching for information within documents and for metadata about documents, as well as searching relational databases and the Web. IR can be combined with knowledge discovery to create software tools that empower users of decision support systems to better understand and use the knowledge underlying large data sets.

The purpose of the International Conference on Knowledge Engineering and Ontology Development (KEOD) is to provide a major meeting point for researchers and practitioners interested in the scientific and technical advancement of methodologies and technologies for knowledge engineering (KE) and ontology development,

both theoretically and in a broad range of application fields. KE refers to all technical, scientific, and social aspects involved in building, maintaining, and using knowledge-based systems. KE is a multidisciplinary field, bringing in concepts and methods from several computer science domains such as artificial intelligence, databases, expert systems, decision support systems, and geographic information systems. Currently, KE is gradually more related to the construction of shared conceptual frameworks, often designated as ontologies. Ontology development (OD) aims at building reusable semantic structures that can be informal vocabularies, catalogs, glossaries, as well as more complex finite formal structures specifying types of entities and types of relationships relevant within a certain domain. A wide range of applications are emerging, especially given the current Web emphasis, including library science, ontology-enhanced search, e-commerce and business process design, and enterprise engineering.

The goal of the International Conference on Knowledge Management and Information Sharing (KMIS) is to provide a major meeting point for researchers and practitioners interested in the study and application of all perspectives of knowledge management (KM) and information sharing (IS). KM is a discipline concerned with the analysis and technical support of practices used in an organization to identify, create, represent, distribute, and enable the adoption and leveraging of good practices embedded in collaborative settings and, in particular, in organizational processes. Effective KM is an increasingly important source of competitive advantage, and a key to the success of contemporary organizations, bolstering the collective expertise of its employees and partners. IS is a term used for a long time in the information technology (IT) lexicon, related to data exchange, communication protocols, and technological infrastructures.

This book of selected papers from IC3K 2015 includes 25 papers, from a total of 280 paper submissions from 53 countries, representing an acceptance ratio of 9%.

We trust that this book will be of interest for all researchers in various fields involving knowledge extraction, knowledge discovery, knowledge engineering, and knowledge management.

September 2016

Ana Fred
Jan Dietz
David Aveiro
Kecheng Liu
Joaquim Filipe

Knowledge Discovery, Knowledge Engineering and
Knowledge Management

7th International Joint Conference, IC3K 2015, Lisbon,
Portugal, November 12-14, 2015, Revised Selected
Papers

Fred, A.; Dietz, J.; Aveiro, D.; Liu, K.; Filipe, J. (Eds.)

2016, XIX, 534 p. 187 illus., Softcover

ISBN: 978-3-319-52757-4