Preface

The present book includes extended and revised versions of a set of selected papers from the 6th International Joint Conference on Knowledge Discovery, Knowledge Engineering and Knowledge Management (IC3K 2014), held in Rome, Italy, during October 21–24, 2014. IC3K was sponsored by the Institute for Systems and Technologies of Information, Control and Communication (INSTICC) and was organized in cooperation with the Association for the Advancement of Artificial Intelligence (AAAI), Information and Knowledge Management Society (iKMS), ACM Special Interest Group on Management Information Systems (ACM SIGMIS), ACM Special Interest Group on Artificial Intelligence (ACM SIGART), European Research Consortium for Informatics and Mathematics (ERCIM) and Associazione Italiana per l'Intelligenza Artificiale (AI*IA).

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:

– International Conference on Knowledge Discovery and Information Retrieval (KDIR)
– International Conference on Knowledge Engineering and Ontology Development (KEOD)
– 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. Automation of IR enables the reduction of what has been called "information overload." 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 study and development of methodologies and technologies for

knowledge engineering and ontology development. Knowledge engineering (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.

Ontology development (OD) aims at building reusable semantic structures that can be informal vocabularies, catalogs, glossaries as well as more complex finite formal structures representing the entities within a domain and the relationships between those entities. Ontologies have been gaining interest and acceptance in computational audiences: formal ontologies are a form of software, thus software development methodologies can be adapted to serve OD. 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.

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 and information sharing. Knowledge management (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. Information sharing (IS) is a term that has been used for a long time in the information technology (IT) lexicon, related to data exchange, communication protocols, and technological infrastructures.

The joint conference IC3K received 287 paper submissions from 56 countries, which demonstrates the success and global dimension of this conference. From these, 39 papers were accepted as full papers, 89 were accepted for short presentation, and another 54 for poster presentation. These numbers suggest a "full-paper" acceptance ratio of about 14 %.

IC3K was complemented by the 5th International Workshop on Software Knowledge (SKY; chaired by Iaakov Exman, Juan Llorens, Anabel Fraga and Juan Miguel Gómez) and the Special Session on Text Mining (SSTM; chaired by Ana Fred).

On behalf of the conference Organizing Committee, we would like to thank all participants. First of all the authors, whose quality work is the essence of the conference, and the members of the Program Committee, who helped us with their expertise and diligence in reviewing the papers. As we all know, holding a conference requires the effort of many individuals. We wish to thank also all the members of our Organizing Committee, whose work and commitment were invaluable.

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