

Preface

Editors' Note/Introduction

The development of information systems and technologies and of intelligent systems techniques and methods enabled their application in various industries and businesses processes and services. Assisted by information and communication technologies, automated activities, and decisions methodologies in the organizations, these systems may reduce costs and increase efficiency and reliability because of enhanced control, integration, and optimization of goods production and service delivery. However, the organizational environment as well as the globalized economic environment is equally dynamic and harsh, which poses extra constraints to management and planning and the integration of these systems in organizations focused on the global market. Such constraints demand for intelligent information systems with appropriate design, analysis, and able to satisfy the requirements of various stakeholders with an interdisciplinary approach.

This book is mainly devoted to intelligent information systems (IIS) and to the integration of artificial intelligence, intelligent systems and technologies, database technologies, and information systems methodologies to create the next generation of information systems. These new types of information systems embody knowledge that allows them to exhibit intelligent behavior. This enables them to cooperate with users and other systems in tasks such as problem solving and retrieval and manipulation of a large variety of multimedia information and knowledge. These systems perform tasks such as knowledge-directed inference to discover knowledge from very large data collections and provide cooperative support to users in complex data analysis. IIS are also concerned with searching, accessing, retrieving, storing, and treating large collections of multimedia information and knowledge and also with integrating information and knowledge from multiple heterogeneous sources.

This book includes original and state-of-the-art research concerning theoretical and practical advances on IIS, system architectures, tools and techniques, and successful experiences in intelligent information systems. The book is organized as

an interdisciplinary forum in which scientists and professionals could share their research results and report in new developments and advances in intelligent information systems and technologies and related areas.

The book includes 19 chapters, which are extended and improved versions of selected papers from CISTI'2016—11th Iberian Conference on Information Systems and Technologies, held in Gran Canaria Island, Spain, June 15–18, 2016. The chapters describe innovative research work, on several areas of information systems and technologies and applications, with emphasis on intelligent information systems. The chapters are focused on areas such as classification and image analysis, qualitative approaches and qualitative data analysis software, optimization and operational research methods and extensions, Web-based decision systems, verbal decision analysis, agile documentation and ontologies, business process modeling and pervasive business intelligence, intelligent urban mobility, ubiquitous systems, and cognitive learning, among several other topics.

We would like to thank all the contributing authors, as well as the members of the conference coordinating, organizing and scientific committees for their hard and valuable work that assured the high scientific standard of the conference and enabled us to edit this book.

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