Smart Innovation, Systems and Technologies

Volume 76

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The Smart Innovation, Systems and Technologies book series encompasses the topics of knowledge, intelligence, innovation and sustainability. The aim of the series is to make available a platform for the publication of books on all aspects of single and multi-disciplinary research on these themes in order to make the latest results available in a readily-accessible form. Volumes on interdisciplinary research combining two or more of these areas is particularly sought.

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Intelligent Interactive Multimedia Systems and Services 2017

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Preface

Dear Readers,

We introduce to you a series of carefully selected papers presented during the 10th KES International Conference on Intelligent Interactive Multimedia Systems and Services (IIMSS-17).

At a time when computers are more widespread than ever, and computer users range from highly qualified scientists to non-computer expert professionals, intelligent interactive systems are becoming a necessity in modern computer systems. The solution of "one-fits-all" is no longer applicable to wide ranges of users of various backgrounds and needs. Therefore, one important goal of many intelligent interactive systems is dynamic personalization and adaptivity to users. Multimedia systems refer to the coordinated storage, processing, transmission, and retrieval of multiple forms of information, such as audio, image, video, animation, graphics, and text. The growth rate of multimedia services has become explosive, as technological progress matches consumer needs for content.

The conference took place as part of the Smart Digital Futures 2017 multi-theme conference, which groups AMSTA, IDT, InHorizons, InMed, SEEL with IIMSS in one venue. It was a forum for researchers and scientists to share work and experiences on intelligent interactive systems and multimedia systems and services. It included a general track and eight invited sessions.

The invited session "Processing visual data in intelligent systems: methods and applications" (Chaps. 1–8) specifically focuses on processing and understanding visual data in intelligent systems. The invited session "Cognitive Systems and Robotics" (Chaps. 9–20) focused on two main research areas, strictly related among them: adaptive and human-like cognitive systems, and artificial intelligence systems and cognitive robotics. The invited session "Big Data Management & Metadata" (Chaps. 21–24) focuses on models, techniques, and algorithms capable of dealing with the volume, velocity, variety, veracity, and value of big data. Differently, the invited session "Intelligent Big Data Analytics: Models, Techniques, Algorithms" (Chapter 25) discusses models, techniques, and algorithms for supporting intelligent analytics over big data in critical application contexts. The invited session

"Autonomous System" (Chaps. 26–29) considers technical and non-technical issues for what concerns intelligent, autonomous systems. The invited session "Mobile Data Analytics" (Chaps. 30–43) focuses on modeling, processing, and analyzing data generated by mobile devices, positioning technologies, and mobile users' activities. The invited session "Smart Environments and Information Systems" (Chaps. 44–49) provides insight into the most recent efforts in the field of information systems operating in dynamic environments. The invited session "Innovative Information Services for Advanced Knowledge Activity" (Chaps. 50–53) focuses on novel functionalities for information services. Finally, the general track (Chaps. 54–57) focuses on topics related to image processing algorithms and image processing-based rehabilitation and recommender systems.

Our gratitude goes to many people who have greatly contributed to putting together a fine scientific program and exciting social events for IIMSS 2017. We acknowledge the commitment and hard work of the program chairs and the invited session organizers. They have kept the scientific program in focus and made the discussions interesting and valuable. We recognize the excellent job done by the program committee members and the extra reviewers. They evaluated all the papers on a very tight schedule. We are grateful for their dedication and contributions. We could not have done it without them. More importantly, we thank the authors for submitting and trusting their work to the IIMSS conference.

We hope that readers will find in this book an interesting source of knowledge in fundamental and applied facets of intelligent interactive multimedia and, maybe, even some motivation for further research.

The editors

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Flora Amato	University of Naples Federico II, Italy
Vincenzo Moscato	University of Naples Federico II, Italy

Intelligent Big Data Analytics: Models, Techniques, Algorithms

Alfredo Cuzzocrea	University of Trieste, and ICAR-CNR, Italy

Autonomous System

Milan Simic	RMIT University, Australia

Mobile Data Analytics

Jalel Akaichi	University of Tunis, Tunisia, and King Khalid University, Saudi Arabia

Smart Environments and Information Systems

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Innovative Information Services for Advanced Knowledge Activity

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