

Communications in Computer and Information Science

701

Commenced Publication in 2007

Founding and Former Series Editors:

Alfredo Cuzzocrea, Dominik Ślęzak, and Xiaokang Yang

Editorial Board

Simone Diniz Junqueira Barbosa

*Pontifical Catholic University of Rio de Janeiro (PUC-Rio),
Rio de Janeiro, Brazil*

Phoebe Chen

La Trobe University, Melbourne, Australia

Xiaoyong Du

Renmin University of China, Beijing, China

Joaquim Filipe

Polytechnic Institute of Setúbal, Setúbal, Portugal

Orhun Kara

TÜBİTAK BİLGEM and Middle East Technical University, Ankara, Turkey

Igor Kotenko

*St. Petersburg Institute for Informatics and Automation of the Russian
Academy of Sciences, St. Petersburg, Russia*

Ting Liu

Harbin Institute of Technology (HIT), Harbin, China

Krishna M. Sivalingam

Indian Institute of Technology Madras, Chennai, India

Takashi Washio

Osaka University, Osaka, Japan

More information about this series at <http://www.springer.com/series/7899>

Maristella Agosti · Marco Bertini
Stefano Ferilli · Simone Marinai
Nicola Orio (Eds.)

Digital Libraries and Multimedia Archives

12th Italian Research Conference on Digital Libraries, IRCDL 2016
Florence, Italy, February 4–5, 2016
Revised Selected Papers

Editors

Maristella Agosti
Dipartimento di Ingegneria
dell'Informazione
Università degli Studi di Padova
Padua
Italy

Marco Bertini
Dipartimento di Ingegneria
dell'Informazione
Università degli Studi di Firenze
Florence
Italy

Stefano Ferilli
Dipartimento di Informatica
Università degli Studi di Bari
Bari
Italy

Simone Marinai
Dipartimento di Ingegneria
dell'Informazione
Università degli Studi di Firenze
Florence
Italy

Nicola Orio
Dipartimento dei Beni Culturali
Università degli Studi di Padova
Padua
Italy

ISSN 1865-0929

ISSN 1865-0937 (electronic)

Communications in Computer and Information Science

ISBN 978-3-319-56299-5

ISBN 978-3-319-56300-8 (eBook)

DOI 10.1007/978-3-319-56300-8

Library of Congress Control Number: 2017937300

© Springer International Publishing AG 2017

This work is subject to copyright. All rights are reserved by the Publisher, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilms or in any other physical way, and transmission or information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed.

The use of general descriptive names, registered names, trademarks, service marks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

The publisher, the authors and the editors are safe to assume that the advice and information in this book are believed to be true and accurate at the date of publication. Neither the publisher nor the authors or the editors give a warranty, express or implied, with respect to the material contained herein or for any errors or omissions that may have been made. The publisher remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Printed on acid-free paper

This Springer imprint is published by Springer Nature

The registered company is Springer International Publishing AG

The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

Preface

Since 2005 the Italian Research Conference on Digital Libraries (IRCDL) has been providing a great opportunity for researchers in the field of digital libraries to present and discuss their current research activities and to envision together further developments. The IRCDL conferences were launched and initially sponsored by DELOS, an EU FP6 Network of Excellence on Digital Libraries, together with the Department of Information Engineering of the University of Padua. Over the years IRCDL has become a self-sustainable event that is supported by the Italian digital libraries community.

The IRCDL 2016 edition, in line with the conference series tradition, was committed to preserving the emphasis on the multidisciplinary nature of the research on digital libraries that has been characterizing the conference over the years. This multidisciplinary nature ranges from computer science to humanities in the broader sense, including research areas such as archival and library information sciences, information management systems, semantic technologies, information retrieval, and new knowledge environments. This is a continued challenge for the DL field and there is the need to continue contributing toward improving the cooperation between the many communities that share common objectives.

IRCDL 2016 hit its target and once more provided the opportunity to explore new ideas, techniques, and tools, and to exchange experiences also from on-going projects. This volume contains the revised accepted papers selected, on the basis of reviewers' comments, from those presented at the 12th Italian Research Conference on Digital Libraries (IRCDL 2016). The conference was organized by the Department of Information Engineering of the University of Florence, Italy, during February 4–5, 2016. The conference was held at the Murate Complex, using the facilities provided by the NEMECH (New Media for Cultural Heritage) Center of Competence established by the Tuscany Region and the University of Florence; the NEMECH Centre promotes the transfer of know-how of research from the university laboratories to the places where cultural goods are exposed and benefited.

The Program Committee comprised 21 members, including representatives of the most active Italian research groups on digital libraries. The Program Committee accepted 70% of the papers presented at the conference for inclusion in this volume, which contains expanded versions of the conference papers. These papers were reviewed again and the results of the final selection are the papers appearing in these proceedings. The topics covered and that reflect the interests of the community are:

- Formal methods
- Long-term preservation
- Metadata creation, management, and curation
- Multimedia

- Ontologies and linked data
- Quality and evaluation
- System interoperability

Here we would like to thank those institutions and individuals who made this conference possible: the committees members, the Department of Information Engineering of the University of Florence, the NEMECH Center of Competence, and the MICC Center of Excellence in the area of new media.

December 2016

Maristella Agosti
Marco Bertini
Stefano Ferilli
Simone Marinai
Nicola Orio

Organization

IRCDL 2016 was organized by the Department of Information Engineering and the Media Integration and Communication Center (MICC) of the University of Florence.

Executive Committee

General Chairs

Simone Marinai University of Florence, Italy
Marco Bertini University of Florence, Italy

Honorary Chairs

Maristella Agosti University of Padua, Italy
Costantino Thanos ISTI CNR Pisa, Italy

Program Chairs

Stefano Ferilli University of Bari, Italy
Nicola Orio University of Padua, Italy

Steering Committee

Maristella Agosti University of Padua, Italy
Tiziana Catarci Sapienza University of Rome, Italy
Alberto Del Bimbo University of Florence, Italy
Floriana Esposito University of Bari Aldo Moro, Italy
Carlo Tasso University of Udine, Italy
Costantino Thanos ISTI CNR Pisa, Italy

Program Committee

Andrew Bagdanov University of Florence
Stefano Berretti University of Florence
Rosa Caffo President of the MICHAEL Culture AISBL
Diego Calvanese Free University of Bozen-Bolzano
Vittore Casarosa ISTI CNR Pisa, Italy
Michelangelo Ceci University of Bari, Italy
Fabio Ciotti University of Roma Tor Vergata, Italy
Rita Cucchiara University of Modena and Reggio Emilia, Italy
Nicola Ferro University of Padua, Italy

Costantino Grana	University of Modena and Reggio Emilia, Italy
Maria Guercio	Sapienza University, Italy
Séamus Lawless	Trinity College Dublin, Ireland
Donato Malerba	University of Bari, Italy
Paolo Manghi	ISTI CNR Pisa, Italy
Antonella Poggi	Sapienza University, Italy
David Rizo Valero	University of Alicante, Spain
Marco Schaerf	Sapienza University, Italy
Gianmaria Silvello	University of Padua, Italy
Anna Maria Tammaro	President at Open Edition Italia
Francesca Tomasi	University of Bologna, Italy
Paul Weston	University of Pavia, Italy

Sponsoring Institutions

University of Florence
MICC Center of Excellence

Contents

Practices

The <i>Archivio dei Possessori</i> of the Biblioteca Nazionale Marciana. A Provenance Database	3
<i>Orsola Braides and Elisabetta Sciarra</i>	
An IT Support for an Exhibition of Illuminated Manuscripts	16
<i>Chiara Ponchia</i>	
Motivating and Involving Users Through Gamification: A Proposal.	20
<i>Andrea Micheletti</i>	
Digital Scholarship Innovation and Digital Libraries: A Survey in Italy	31
<i>Anna Maria Tammaro</i>	

Multimedia

Hermeneutic Implications of Cultural Encoding: A Reflection on Audio Recordings and Interactive Installation Art	47
<i>Federica Bressan, Sergio Canazza, Tim Vets, and Marc Leman</i>	
Searching and Classifying Affinities in a Web Music Collection	59
<i>Nicola Orio</i>	
Searching and Exploring Data in a Software Architecture for Film-Induced Tourism	71
<i>Sandro Savino and Nicola Orio</i>	

Semantics

An Ontology to Make the DELOS Reference Model and the 5S Model Interoperable	85
<i>Maristella Agosti, Nicola Ferro, and Gianmaria Silvello</i>	
Realizing a Scalable and History-Aware Literature Broker Service for OpenAIRE	92
<i>Paolo Manghi, Claudio Atzori, Alessia Bardi, Sandro La Bruzzo, and Michele Artini</i>	

Stratifying Semantic Data for Citation and Trust:
An Introduction to RDFDF 104
*Dario De Nart, Dante Degl'Innocenti, Marco Peressotti,
and Carlo Tasso*

Formal Components of Narratives 112
Valentina Bartalesi and Carlo Meghini

Evaluation

Proposal for an Evaluation Framework for Compliance Checkers
for Long-Term Digital Preservation 125
Nicola Ferro

Towards Sentiment and Emotion Analysis of User Feedback
for Digital Libraries 137
*Stefano Ferilli, Berardina De Carolis, Domenico Redavid,
and Floriana Esposito*

Layout

Layout Analysis and Content Classification in Digitized Books 153
*Andrea Corbelli, Lorenzo Baraldi, Fabrizio Balducci,
Costantino Grana, and Rita Cucchiara*

A Study on the Classification of Layout Components for Newspapers 166
Stefano Ferilli, Floriana Esposito, and Domenico Redavid

Author Index 179