

# Empowering the Visibility of Croatian Cultural Heritage through the Digital Humanities



# Empowering the Visibility of Croatian Cultural Heritage through the Digital Humanities

Edited by

Marijana Tomić,  
Mirna Willer  
and Nives Tomašević

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through the Digital Humanities

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**This book is dedicated to the memory of mons. Pavao Kero, the guardian and researcher of Zadar Glagolitic heritage and *spiritus movens* of Zadar Glagolitic Circle.**



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## FOREWORD

This volume has been shaped by the challenges faced and questions posed within the international scientific project *Digitization, bibliographic description and research of texts written in Glagolitic, Croatian Cyrillic and Latin scripts until the end of the 19<sup>th</sup> century in the Zadar and Šibenik area (Written heritage project)* conducted by the Department of Information Sciences of the University of Zadar, Croatia and Vestigia Manuscript Research Centre of the University of Graz, Austria. The project goals include digitization and bibliographic description of Croatian Glagolitic manuscripts collections, as well as the research in several humanities areas, such as philology and history, particularly in concordance within the digital humanities framework. Furthermore, the project aims include building of infrastructure for (cooperative) research of written heritage in digital environment, and promotion of contemporary models of written heritage communication. The special aim of the project is to act as a laboratory for university students and scholars' research of written heritage, especially manuscripts and old and rare books.

The *Written heritage project* acts as a vivid platform for discussions among prominent international scholars coming from (digital) humanities and information sciences. All kind of general questions concerning digital humanities, digitization of cultural heritage, and description and visualization of data on cultural heritage are questioned and discussed. These discussions and their conclusions are reflected in this volume. Consequently, the aim of this volume is to bring together refereed papers covering topics on the contemporary cultural heritage research framework within the field of digital humanities from the aspect of description and access to cultural heritage and digitization of cultural heritage in general, and Glagolitic and Latin written heritage as a source for historiographic and linguistic research in particular. It also brings together papers on research methods in humanities, and on digital humanities education.

The first chapter gives a short overview of the *Written heritage project*, while the rest of the book is organized in seven topics, each questioning one of the important research areas within digital humanities framework: (1) *Digital humanities as a contemporary cultural heritage research framework*, (2) *Description and access to cultural heritage: conceptual models and standards*, (3) *Digitization of cultural heritage*, (4) *Glagolitic*

*and Latin written heritage as a source for historiographic and linguistic research, (5) Literary studies, (6) Research and communication of cultural heritage, and (7) Education in the field of Digital Humanities.* Particular emphasis of the volume is placed on the presentation of methods and results of research of cultural heritage, especially written heritage, namely manuscripts, but also on the research in art history, linguistics, classical philology, etc.

In the context of reflection on the future of research in the field of humanities, starting from the tradition of the University of Zadar, Croatia, the aim of this volume is to present research methods and tools used in humanities research in order to identify main research approaches and areas of cooperation within the humanities and between the humanities and other scientific fields, and to provoke further discussions on the need to develop institutional or cross-institutional centres for digital humanities and university education in the field.

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**Dr Dubravka Kolić**, Head of the Department for Arranging and Processing Records from the period 1814 -1918 at the State Archives in Zadar, Croatia. She graduated History and Sociology at the Faculty of Philosophy in Zadar, and finished her postgraduate studies in Information Sciences at the Faculty of Humanities and Social Sciences, University of Zagreb with her master's thesis *The Regency for Dalmatia in Zadar 1814-1918: Institution and records*. She obtained her PhD at the University of Zadar, Department of Information Sciences in 2018 with the thesis *Institutions and records during the second Austrian administration in Dalmatia from 1814 to 1868*. Her interests focus on the archives of the Second Austrian Governmental Institutions, and personal and private archives. She published several professional and scientific articles in the field.

**Dr Aleksandra Krajinović**, Associate Professor at the Department of Economics, and Head of the Department for Organization, Management and Entrepreneurship at the Department of Economics, University of Zadar, Croatia. She graduated at the Faculty of Management in Tourism and Hospitality in Opatija, University of Rijeka, where she obtained her master's and, in 2016 doctoral degree in the field of economics. She participated in several scientific and professional projects, and is an author or co-author of 80 scientific and professional papers and reviews. Areas of her scientific interest are marketing, management and tourism.

**Dr Martina Kramarić**, Research Assistant at the Institute of Croatian Language and Linguistics, Zagreb, Croatia. She finished Postgraduate Study of Croatian Language History and Dialectology, University of Rijeka with focus on philology, Croatian philology, language history, dialectology. Her PhD thesis was entitled *Czech loanwords in Zrcalo človečaskogo spasenja (1445) in the context of Old Croatian translations from the Old Czech language*. She is involved in several projects: *Old Croatian Dictionary*, *Pre-standard Croatian Grammars*, *Matija Divkovic in the Croatian culture* and *Korpuslinguistik und diachrone Syntax: Subjektasus, Finitheit und Kongruenz in slavischen Sprachen*. She received a number of grants and fellowships. She is a member of the EU funded COST action: European Network of e-Lexicography (European Cooperation in Science and Technology) and Retrodigitized Dictionaries (since January 2016) and Cendari Trusted Users Group. Her research interests are Medieval (Croatian) language and literature, language history, textology, lexicography, Czech language, digitization, retrodigitized dictionaries.

Dr **Marcelo Milrad** is a Full Professor at the Department of Computer Science and Media Technology, Linnaeus University, Växjö, Sweden, and och Vice-dean within the digitalization field at the Faculty of Technology. Professor Milrad has published over 200 articles in international journals, refereed conferences, books and technical reports. He has also been presenting and giving lectures about his work in more than 45 countries worldwide. Professor Milrad teaches undergraduate courses in Media Technology and Computer Science, with a special focus on XML, web 2.0 and mobile technologies. Currently, he is actively involved in teaching Programming for Digital Humanities and also courses on Programming for Teachers. He also teaches doctoral courses in the field of Technology Enhanced Learning. Marcelo Milrad's current research interests include the design of learning environments to support learning about complex domains, collaborative discovery learning and the development of mobile and wireless applications to support collaborative learning.

Dr **Benedikt Perak**, Senior Research Assistant at the Department of Cultural Studies, Faculty of Humanities and Social Sciences, University of Rijeka, Croatia. His main fields of research include the conceptualization and communication of emotions, subjective states, and complex semantic processes of construction of social identity. His research is based on the system theory, embodied cognition theory, graph theory and methodology of cognitive and corpus linguistics, natural language processing. He is a head of the Cultural Complexity Lab (LINKS) at the University of Rijeka and a researcher on the projects *Repository of Croatian Metaphor Repository* and *Framing the Nation and Collective Identity in Croatia: Political Rituals and the Cultural Memory of 20th Century Traumas* funded by the Croatian Science Foundation. He is leader of a project *Conceptual network of the linguistic expression of emotions and affective states* (EmoCNET) at the Faculty of Humanities and Social Sciences and Informatics Department of the University of Rijeka.

Dr **Erich Renhart**, Full Professor, director of the Manuscript and Rare Book Collection of the Graz University Library, Austria since 2009. He graduated in liturgical studies in 1991, and did his habilitation in the same research area focusing works on Eastern and Western medieval manuscripts (mainly Latin, Greek, Syriac and Armenian). In 2005 he founded the research institution “VESTIGIA” (lat. traces) which is devoted to the manuscript heritage. Emphasis is laid on the scientific edition of texts, on creating access to sources by digitisation technologies, and on conservation issues. From its very inception this research centre has taken a slant towards



Eastern libraries and their collections. These have included Yerevan, Sofia, Ohrid, Tirana, Zadar and others. He is involved in a series of international projects.

**Sara Ries**, assistant at the Croatian Academy of Sciences and Arts, Institute for the History of Croatian Literature, Theatre and Music, Department for the History of Croatian Music, Zagreb, Croatia. She holds MA in Musicology from the Music Academy, University of Zagreb. Her fields of research are Croatian music (19th century), and Gothic script. She received a number of fellowships and grants, and is a member of *Croatian Musicological Society* since 2010. She published several articles in the field.

**Dr Nives Tomašević**, retired as Associate Professor at the Department of Information Science, University of Zadar, Croatia. She has spent most of her professional career in publishing, as an assistant director for books and editor, but also as an owner of the publishing house (*Elephant Publishing*). She completed her PhD in 2008, with the thesis *Transition in Publishing and Manufacture of Books as a Cultural Capital* at the doctoral studies of Croatian culture at the Faculty of Philosophy, University of Zagreb. During her work experience she edited a large number of books and started a number of publishing series. Alongside publishing activity in *Ljevak Publishing*, she publishes scientific papers, organizes workshops and runs the module “Publishing” at the doctoral study *Knowledge Society and Transferring Information* at University of Zadar. She is co-author *Knjiga, tranzicija, iluzija* (*Book, Illusion, Transition*, 2009) with Miha Kovač and *Nevidljivo nakladništvo* (*Invisible publishing*, 2012) with Jasna Horvat, and the author of *Kreativna industrija i nakladništvo* (*Creative industry and publishing*, 2015).

**Dr Marijana Tomić**, Associate Professor at the Department of Information Sciences, University of Zadar, Croatia. She teaches courses in the theory and practice of information organization, cataloguing of old and rare books, book history and digital humanities. She is a member of Standing Committee of IFLA Rare Books and Special Collections Section and a chair of Section for the History of Books and Libraries of Croatian Library Association (2016-2018). She is a chair of the interdisciplinary scientific project *Digitization, Bibliographic Description and Research of Texts Written on Glagolitic, Croatian Cyrillic and Latin Scripts Until the End Of 19th Century in Zadar and Šibenik Area* which is being carried out at the University of Zadar by the Department of Information Sciences in co-

operation with VESTIGIA Manuscript Research Centre of the University of Graz, Austria. She published widely in the field.

**Dr Ivana Tomić Ferić**, Associate Professor at the Arts Academy, University of Split, Croatia. She received her PhD degree in 2006 at the Department of Musicology at the Music Academy, University of Zagreb with the theme of *Julije Bajamonti (1744th-1800th): Music Dictionary. Transcription, translation, comments*. She is the member of the editorial board of the Faculty of Philosophy, University of Split and the Croatian Musicological Proceedings *Arti musices*. She is the author of one scientific book, and a number of scientific papers published in relevant journals and proceedings. She won two awards in the field of musicology in 2013: *Dragan Plamenac* of the Croatian Musicological Society, and *Josip Andreis* of the Croatian Composers Society as well as the Award of the Croatian Academy of Sciences and Arts for distinguished results in the field of music. She is an associate in research projects that investigate the Croatian musical heritage and a member of several professional committees (Festival of Dalmatian songs in Omiš, Split Summer Festival, Cro patria). Her scientific interests are linked to the field of music historiography and aesthetics of music.

**Filip Turković-Krnjak**, curator at Croatian Academy of Sciences and Arts, Glypthoteque, Zagreb, Croatia since 2017. He graduated with Master's Degree in Archeology and Art History at the Faculty of Humanities and Social Sciences, University of Zagreb in 2009. He worked as a curator at The Art Pavilion in Zagreb, The Strossmayer Gallery of Old Masters and as a documentalist in Institute of Art History, Glypthoteque and the Croatian Museum of Naive Art.

**Dr Ivica Vigato**, Associate Professor at the Department for Training Teachers and Educators, University of Zadar, Croatia. He graduated from the Faculty of Arts and Humanities and Zadar, the University of Split in 1984, where he obtained his master's degree 2003 with the thesis *The letters scripts and languages of the oldest Glagolitic registers of baptism from Silba*, and doctoral degree in 2008 with the dissertation *The language of the Silba's before revival monuments*. He authored and co-authored over 30 articles published in relevant Croatist and Slavic journals and publications, and spoke at a number of national and international scientific and professional conferences. His fields of research are historical dialectology, the history of the Croatian language, grafolinguistics, historical anthroponymy and toponymy, phraseology, written monuments in the education system.

**Dario Vištica**, student of the undergraduate study of Management at Department of Economics, University of Zadar, Croatia. He holds a Google Certification from Digital Marketing Fundamentals program awarded by IAB Europe and completed online web design training at Codecademy. He is vocationally focused on soundtrack composing and producing, in the field of which he published the documentary *Migration Challenges: The Same People / Other Places*. He composed soundtrack and edited movie about guslar *The Cara-Ali: Le Vampire*, presented twice in Paris.

Dr **Georg Vogeler**, technical director of the *monasterium.net consortium* since 2006, professor for Digital Humanities at the University of Graz, Austria since 2016, and the founding member of the Institut für Dokumentologie und Editorik e.V. (<http://i-d-e.de>). He studied the Historical Auxiliary Sciences at Ludwig-Maximilians-University, Munich, Germany, where he earned his PhD with research on late medieval tax administration. He continued his research in the field of diplomatics with a book on the use of the charters Emperor Frederick II. (1198-1250) in Italy. In 2004 he started an initiative to develop diplomatics into an eScience.

Dr **Mirna Willer** retired as Full Professor at the University of Zadar, Department of Information Sciences, University of Zadar, Croatia in 2018. Her fields of interest are theory and practice of information organisation, conceptual models and standards in archives, libraries and museums, and Semantic Web technologies. Among other international body memberships, she was a member and chair of the IFLA Permanent UNIMARC Committee, member of the IFLA Working Group on FRANAR, chair and member of the IFLA ISBD Linked Data Study Group, and chair and member of the IFLA ISBD Review Group. She published widely in the field, including the books *UNIMARC in Theory and Practice*, and *Bibliographic Information Organization in the Semantic Web* co-authored with Gordon Dunsire.



# CHAPTER 1

## “PISANA BAŠTINA” (WRITTEN HERITAGE)<sup>1</sup>- A PROJECT OF DIGITIZATION OF GLAGOLITIC AND OTHER MANUSCRIPTS IN THE REGION OF ZADAR/CROATIA

ERICH RENHART

### Introduction

The following contribution relates to a project on the digitisation of manuscripts that has been ongoing since October 2016. It describes the project's beginnings, the immediate steps which led to its realisation, as well as the concrete execution and some of the connected questions arising during the process. Finally, the significance of the project is underscored. The project is the fruit of years of ongoing collaboration between two university institutions, the Department of Information Sciences at the University of Zadar, Croatia<sup>2</sup>, and the research institution “Vestigia – Manuscript Research Centre” (Centre for the Research into Book and Written Heritage)<sup>3</sup> at Karl Franzens University, Graz, Austria. The cooperation between these two universities led to a partnership agreement in 2009 which established a more formal framework for collaboration.<sup>4</sup>

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<sup>1</sup> The full title of the project is *Digitalizacija, bibliografska obrada i istraživanje tekstova zadarsko-šibenskog područja iz razdoblja do kraja 19. st. pisanih glagoljicom, bosančicom i latinicom* [Digitization, bibliographic description and research of texts written in Glagolitic, Croatian Cyrillic and Latin scripts until the end of the 19<sup>th</sup> century in the Zadar and Šibenik area].

<sup>2</sup> Odjel za informacijske znanosti, Sveučilište u Zadru, accessed March 17, 2019, <http://iz.unizd.hr/o-nama/djelatnici-i-suradnici> [Department of Information Sciences, University of Zadar, Croatia].

<sup>3</sup> *Vestigia*–Manuscript Research Centre, accessed March 17 2019, <https://vestigia.uni-graz.at> [Centre for the research into book and written heritage].

<sup>4</sup> The contract was signed on June 5, 2009 by the rectors of respective universities.

The project activities were placed in the hands of the two proponents; Marijana Tomić (Zadar) and Erich Renhart (Graz). Numerous common activities ensued: joint summer-schools, guest residencies of students and teaching staff, teaching exchanges, participation in symposia, and joint publications.<sup>5</sup> After the successful conclusion of the Utrecht Network Summer School on “Hidden Libraries”,<sup>6</sup> in Graz, in June 2014, we agreed to develop a joint project to launch the systematic digitisation of historic manuscripts in a specific place in Croatia.

### Concrete beginnings

This extensive project reached its final draft, including all necessary ramifications, around the end of 2015, an achievement for which the initiator and project director Marijana Tomić was responsible. Two dozen people declared their interest in participating in this project. Furthermore, a substantial number of collections from the region were ready to open their doors to this digitisation endeavour, an attitude that is worthy of note. The next step was the practical implementation of the project. An important step for the realisation of the project was the contribution by the Vestigia Research Centre of a “Traveller TCCS 4232”<sup>7</sup> digitisation unit, which was initially provided on loan for the duration of two years. With this, the project could access a tool which would prove very useful. In March 2016, the unit was transferred to the University of Zadar. At the same time, the University of Zadar purchased a computer and a camera.<sup>8</sup>

This was followed by a period of technical trials. After an initial general introduction by Manfred Mayer, in Graz,<sup>9</sup> the first independent digitisation trials were undertaken in Zadar. These first tests did not, however, follow any specific system. This was soon to change after the end of the academic summer break.

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<sup>5</sup> Erich Renhart, “Eine Spurenlese in alten Büchern und Bibliotheken,” in *Bericht aus dem Forschungszentrum Vestigia 2005/06-2015* (Graz: Vestigia, 2015), 57-62.

<sup>6</sup> *Hidden Libraries*, last modified March 17 2019, [www.hiddenlibraries.at](http://www.hiddenlibraries.at); archived under [www.vestigia.at](http://www.vestigia.at).

<sup>7</sup> Information available at: <https://vestigia.uni-graz.at/de/arbeitsbereiche-projekte/technologieentwicklung/der-traveller-tccs-4232/>

<sup>8</sup> Type Canon EOS 70D.

<sup>9</sup> DI Manfred Mayer is the head of the Department for Book Restoration and also the designer of Vestigia’s digitisation equipment.