

Preface

The main aim of the Fourteenth International Conference *Digital Presentation and Preservation of Cultural and Scientific Heritage (DiPP2024)* is to bring together as many interested institutions as possible working on digitising, recording, documenting, archiving, presenting, protecting and managing cultural and scientific heritage, so that they can share their advanced thoughts, know-how and experience. Public and specialised libraries, museums, galleries, archives, community centres, research institutions and universities are expected to share and acquire knowledge, skills, and expertise at the event.

Four types of papers are presented – invited papers, full papers, short papers, and project papers. The first three types discuss current scientific results, trends and achievements in the field of digital preservation and presentation of cultural and scientific heritage. The project papers present developments in progress, part of them experimental, made by memory institutions during their institutional projects.

- *Invited papers*

The paper by Maxim Goynov, Detelin Luchev, Desislava Paneva-Marinova, Gita Senka, Konstantin Rangochev, Lilia Pavlova, Radoslav Pavlov and Lubomir Zlatkov presents the research, development, and the implementations of the web-based platform for intelligent cultural content management *CultIS* – an environment for cataloging, indexing, data retrieval, curation and collection development for the needs of cultural institutions.

The paper by Slavia Barlieva and Elka Zlateva describes the *Kyrillomethodikon*, a digital repository offering resources for research on the first stage of Slavic Christian and Old Bulgarian culture, and the accompanying a Scientific and Educational Interdisciplinary Centre for Cyrillo-Methodian studies.

The paper by Michela Tramonti, Alden Meirzhanovich Dochshanov and Luigi Tramonti introduces the *BIG GAME* project for digital storytelling and game-based learning for secondary school STEM students and its innovative approach.

The paper by Radomir S. Stanković, Dušan Tatić and Detelin Luchev proposes an integral solution for application of information technologies in providing presentations of the historic heritage related to Serbian fortresses from the period 12th to 18th century.

The paper by Vassil Dimitrov, Richard Ford, Laurent Imbert, Arjuna Madanayake, Nilan Udayanga and Will Wray argues for the utilization of multiple-base logarithmic number systems (MDLNS) for the optimizing the performance of large ML models,

based on a better quantization signal-to-noise ratio performance in comparison with the floating point quantizations.

The paper by Dušan Tatić and Radomir S. Stanković discusses the incorporation of augmented reality applications for presentation of cultural and historical heritage in various cultural institutions in Serbia, and a proposed classification of the AR software based on their usage.

The paper by Gábor Keve, Zsolt L. Márkus, György Szántó, Tibor Szkaliczki, Miklós Veres and Zsolt Weisz presents the Water Management Digital Knowledge Repository developed in Hungary to preserve the heritage of water profession, facilitate access to the information for the public, and aid the mitigation of damage due to water-related disasters.

- *Full papers*

The paper by Klára Rybenská, Barbora Borůvková and Klára Burianová describes the possibilities of 3D documentation of historical monuments by photogrammetry on a selected sample of Roman coins, and the methodology of creating 3D models of ancient coins.

The paper by Katia Rasheva-Yordanova, Georgi P. Dimitrov, Paulina T. Tsvetkova, Milena Bankovska and Pavel S. Petrov investigates methods for increasing the readability of palimpsests through the use of image preprocessing techniques.

The paper Petya Osenova and Kiril Simov reports on the preliminary results on the modifications to and extensions of a Wordnet for Bulgarian designed for language learning applications.

The paper Yasena Chantova discusses the polysemy in a Perec's crossword and the relevant applications of a Culioli's modelling approach.

The paper Todor Todorov presents web accessibility standards and challenges related to their complying, with a review of popular artificial intelligence tools their potential use in solving web accessibility issues.

The paper Sebiha Madanska, Sheban Bilyanov, Asya Stoyanova-Doycheva and Evgenia Dimova-Aleksandrova elaborates on the concept of alternative tourism, its subtypes, and its role in the preservation of cultural and historical architectural heritage.

The paper by Elena Zaharieva-Stoyanova studies problems related to the development of cross-stitch software and the digital presentation of traditional Bulgarian embroidery patterns.

The paper by Maria Teresa Artese and Isabella Gagliardi proposes a method for analysing historical culinary recipes through topic modelling and data visualisation.

The paper by Ilze Pētersone overviews the development of digital collections at the National Library of Latvia, highlighting experiences in digitising periodicals and making digitised material accessible.

The paper by Rosen Ivanov and Victoria Velkova presents a Bluetooth Low Energy (BLE) beacon technology solution for enhancing visitor experiences in museums.

The paper by Maria Neikova proposes the the establishment of sustainable legal and regulatory framework in comply with the highest standards of protection of cultural heritage.

The paper by Maria Teresa Artese, Isabella Gagliardi and Mattia Fortunati describes *MyStoriesBag* – a storytelling and game creation tool aiming to facilitate the sharing of cultural heritage through collaborative and participatory user-generated content.

The paper by Radoslav R. Yoshinov, Borislav Yoshinov and Ivet Koleva presents the structure of an e-archive for neurorehabilitation students and trainees.

The paper by Rasim Atakan Poyraz, Prajyot Suvarna and Alexander I. Iliev explores feature extraction methods for emotion recognition in cultural heritage audio recordings in digital archives.

- *Short papers*

The paper by Alexandra Nikolova, Vladimir Georgiev and Emanuela Mitreva discusses the results and effects of using achievement badges in e-learning.

The paper by Irena Peteva, Daniela Pavlova, Ivanka Pavlova and Panayot Gindev focuses on digitization as a mechanism to protect cultural heritage in crisis and conflict situations.

- *Project papers*

The paper by Gabriela Angelova introduces the concept and framework of a scientific project on the printed Catholic books in the Bulgarian publishing system between 1878 and 1944.

The paper by Tsvetomira Kazashka, Sebiha Madanska, Veneta Tabakova-Komsalova, Daniela Djeneva and Iliya Nedelchev introduces an ontology of Bulgarian dance folklore.

The paper by Gergana Yancheva describes a research project on web socialization, and popularizing local history information resources and e-projects created by libraries in Bulgaria.

The paper by Ivan Kratchanov and Dimitar Minev discusses the development of an augmented reality serious game for interaction with cultural heritage in Plovdiv, Bulgaria.

The paper by Detelin Luchev, Maxim Goynov, Radoslav Pavlov, Mariya Monova-Zheleva, Yanislav Zhelev and Lilia Pavlova presents an approach for the creation of natural resources management and environmental protection educational games.

The paper by Elena Taina Avramescu, Mariya Monova-Zheleva and Yanislav Zhelev outlines approaches and solutions for online rehabilitation developed within the Erasmus+ joint project "Development of digital skills for online rehabilitation therapies/e-KINE".

The paper by Emanouil Atanassov, Aneta Karaivanova and Todor Gurov discusses the new developments in the HPC Ecosystem in Bulgaria.

- *Workshops and Demos*

The *Workshop and the 15th National Information Day: Open Science, Open Data, Open Access, Bulgarian Open Science Cloud*, chaired by Peter Stanchev, Aneta Karaivanova, Yanita Zherkova, Mikaela Stancheva, Jordan Iliev, Desislava Paneva-Marinova, and Georgi Simeonov gives an overview of the current landscape and the activities on national and institutional level regarding Open Science, Open Access to scientific information, Open Data and the overall development of the Bulgarian Open Science Cloud.

The *Workshop on Promoting the Digital Transformation in Higher Education through the Building of a Cohesive Network for Collaboration and Transfer of Knowledge and Pedagogical Innovations*, chaired by Yanislav Zhelev and Mariya Monova-Zheleva describes the approach and concept developed by seven organisations from Spain, Bulgaria, France, Italy and Portugal in the framework of international project *European Network in D-Flexible Teaching (ENID-Teach)*, funded by the European Commission through the Erasmus + programme, KA220-HED - Cooperation Partnerships in Higher Education.

The *Information Day: Research Infrastructure Services in the Humanities and Social Sciences*, chaired by Desislava Paneva-Marinova, Radoslav Pavlov, Detelin Luchev, Maxim Goynov, Lubomir Zlatkov and Nikolay Noev presents research results of the work of the Institute of Mathematics and Informatics at the Bulgarian Academy of Sciences on the project CLaDA-BG, the Bulgarian National Interdisciplinary Research e-Infrastructure for Resources and Technologies in Favor of the Bulgarian Language and Cultural Heritage, Part of the EU Infrastructures CLARIN and DARIAH (funded by the Ministry of Education and Science of Bulgaria) and the research project No KP-06-N50/4 30.11.2020 “Fourteenth Century South Slavonic Scribes and Scriptoria (Palaeographical Attribution and Online Repertorium)” (funded by the Bulgarian Scientific Fund).

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