

Semantic Web and Reasoning for Cultural Heritage and Digital Libraries

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Cultural heritage and digital libraries are two closely related disciplines that traditionally benefit by the application of innovative information technologies. Currently, Semantic Web research has also grown satisfyingly mature to enable achieving tangible results and added-value in both these knowledge-intensive domains, in spite of the critical challenges of knowledge acquisition and reasoning about complex data.

The purpose of this special issue is to put together a selection of high-quality research and development efforts in these areas that can offer an insight about the current state-of-the-art to the interested reader.

Two papers in the issue deal with the idea of repurposing the FRBR standard towards semantic annotation and management of bibliographic records, revealing its importance and applicability for library curators in the Semantic Web context. “Supporting Multilingual Bibliographic Resource Discovery with Functional Requirements for Bibliographic Records” presents an FRBR-based service that enhances existing on-line library catalogs in a more semantically rich and relevant way to the user. Moreover, “FRBR-ML: A FRBR-based Framework for Semantic Interoperability” proposes a framework upon which legacy bibliographic data can be

transformed into meaningful semantic descriptions based on the FRBR model.

Semantic interoperability is a top-priority issue for cultural heritage applications, due to the need to aggregate legacy and/or disperse data within knowledge-aware services. In “Instance-based Semantic Interoperability in the Cultural Heritage” the authors thoroughly review and evaluate ontology matching methods in cultural heritage scenarios and present their lessons-learned from their experience with the STITCH project. In addition, “A Systemic Approach for Effective Semantic Access to Cultural Content” discusses a system for mapping proprietary metadata schemas to domain models within the framework of Europeana, and discusses reasoning-based techniques and optimizations for their discovery.

The Semantic Web can enable novel dimensions in cultural information management and utilization. This is exemplified in the paper “How to Deal with Massively Heterogeneous Cultural Heritage Data – Lessons Learned in CultureSampo”. Here, the authors give insights to transforming and publishing existing cross-domain cultural heritage data of multiple forms as linked data, and to maintaining

interoperability at a semantic level, while providing novel user interfaces for their exploitation.

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