

Digital Humanities on the Semantic Web for visual, literary, and performing arts: Demonstrating ArtSampo, BookSampo, and OperaSampo Linked Open Data services and semantic portals

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Abstract

The arts can be divided into several different categories, including traditionally *visual arts*, *literary arts* and *performing arts* (Britannica 2024). This demonstration paper presents three Linked Open Data services and semantic portals for searching, exploring, and analyzing data related to these fields, and shows how they can be used to aid Digital Humanities (DH) research.

ARTSAMPO¹ (Ahola, Rantala, and Hyvönen 2024) is a semantic portal² dealing with Finnish fine arts based on openly available collection metadata from art museums including 80 677 objects from the three museums of the Finnish National Gallery³. The data is enriched by data linking to external datasets and with additional keywords and descriptions generated using multimodal generative artificial intelligence (GenAI) and Large Language Models (LLM) to enhance the user's experience as well as recall for keyword-based searches (Ahola, Peura, Leal, et al. 2024) and creation of recommendation links.

BOOKSAMPO⁴ with its 1.6 million annual users is the most used Sampo system. It deals with Finnish literature, both works originally written in one of the national languages of Finnish and Swedish as well as translated works published in Finland. However, its original user interface does not support making literary data-analyses. As a remedy, a new alternative user interface Booksampo 2.0⁵ was created (Hyvönen, Ahola, and Ikkala 2022; Ahola and Hyvönen 2023). This interface, based on the Sampo model (Hyvönen 2022) and Sampo-UI framework (Ikkala et al. 2022; Rantala et al. 2023), allows studying, e.g., not only the works themselves on an abstract level, but also the evolution of Finnish literature on the publication level (Ahola, Peura, and Hyvönen 2024).

OPERASAMPO (Ahola, Hyvönen, et al. 2024) is a portal dealing with historical opera and music theatre performances in Finland in 1830–1960. Instead of the more traditional focus on the compositions and composers, OPERASAMPO follows the gradual paradigm shift in musicology that has an increased focus on also the performers and people involved with the performances (Cook 2001). This focus allows the user to, for example, easily study the history of a performer's roles on a timeline instead of the performers just being a string value in a list of names.

The portals above are part of the Sampo series of systems⁶ (Hyvönen 2022) dealing with Cultural Heritage (CH) data, and are built using the Sampo-UI framework. Sampo-UI allows the creation of new Sampo portals easily on top of new or existing RDF data available in SPARQL endpoints by editing JSON configurations and SPARQL query files in a declarative fashion (Rantala et al. 2023).

¹ArtSampo project homepage: <https://seco.cs.aalto.fi/projects/taidesampo/>

²ArtSampo demo is available at: <https://artsampo.demo.seco.cs.aalto.fi/en>

³National Art Gallery: <https://www.kansallisgalleria.fi/en>

⁴BookSampo – Finnish Literature on the Semantic Web, legacy system: <https://analyysi.booksampo.fi>

⁵BookSampo 2.0 is available at: <https://analyysi.booksampo.fi>

⁶<https://seco.cs.aalto.fi/applications/sampo/>

Keywords

linked data, semantic web, portals, cultural heritage

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