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CultureSampo – Finnish Culture on the Semantic Web

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Outline

- | Introduction
- | Research problems
- | Event-based approach
- | Methods illustrated within a CultureSampo portal
- | Conclusions

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Introduction: CultureSampo

- | CultureSampo is a cultural heritage portal based on Semantic Web technologies
- | The portal is a publishing channel for heterogenous cultural heritage content
- | Portal provides access services to access the content

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Introduction: dataset

Object type	Source
Museum objects	Antikvaria, NBA, ECM, Sarka, MuseumFinland
Paintings	National Gallery of Finland
Photographs	Antikvaria, NBA
Narrative content / text	Finnish Literature Society
Skills / Artistry	Espoo city museum, TAIK
Video	Espoo city museum, YLE
Artist metadata	ULAN of Getty Foundation
Buildings	Espoo city museum
Aerophotographs	Karhumäki aerophotographs
Historical events	Agricola-dataset, Wikipedia tarjalla-pages
Music	E-Sävellet

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Research Problems: data Integration

- | *heterogeneous cross-domain content*
 - Heterogeneous metadata schemas
 - Metadata and knowledge representation mismatch
 - Complexity of reasoning

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Research Problems: Methods



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- | Multifacet search and exhibition generation
- | Recommendation
- | Relational search
- | Narrative modeling and narrative based access
 - Biographies, web-pages, semantic Kalevala
- | Visualisation of the content
 - Geographical
 - Timeline
- | Ontology changes
 - Historical place names
- | Fuzzy and Uncertainty methods for temporal and spatial data
- | ALL METHODS ARE IMPLEMENTED IN THE PORTAL



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Event-based metadata mapping



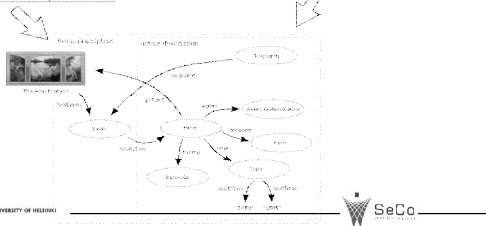
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Painting annotation

Type	Painting
Title	Aino-triptych
Creator	Gallén-Kallela
Date	1889
Location	Paris
Subject	Kalevala

Biography in text format

... Gallén started depicting Kalevala, which had fascinated him for many years. First he painted the three-part Aino-painting, which he finished in 1889. It won the second place medal in the Paris world fair the same year ...



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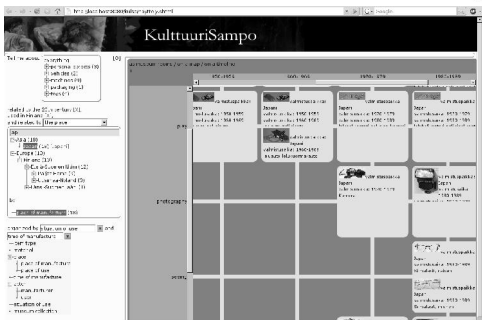
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Multifacet search and exhibition generation



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Multifacet search and exhibition generation



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Multifacet search and exhibition generation

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Multifacet search and exhibition generation

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Recommendation system

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Biographies

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Semantic Kalevala

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Conclusions



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- | CultureSampo is a cultural heritage portal based on Semantic Web technologies
- | The portal is a publishing channel for heterogenous cultural heritage content
- | Event-based knowledge representation using ontologies enables high precision on linking contents
- | Various methods to access and visualize the contents



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Publications



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Tuukka Ruotsalo and Eero Hyvönen:
An Event-based Approach for Semantic Metadata Interoperability.
In Proceedings of the ISWC 2007. Busan, Korea, November, 2007.

Tuukka Ruotsalo and Eero Hyvönen:
A Method for Determining Ontology-Based Semantic Relevance.
Proceedings of the International Conference on Database and Expert Systems Applications DEXA 2007, Regensburg, Germany, Springer, September 3-7, 2007.

Eero Hyvönen, Kim Viljanen, Eetu Mäkelä, Tomi Kauppinen, Tuukka Ruotsalo, Onni Valkesmä, Katri Seppälä, Osmo Suominen, Olli Almi, Robin Lindroos, Jarmo Kärsälä, Riikka Henriksson, Matias Frosterus, Jouni Tuominen, Reetta Sinkkilä and Jussi Kurki:
Elements of a National Semantic Web Infrastructure – Case Study Finland on the Semantic Web (Invited paper).
Proceedings of the First International Semantic Computing Conference (IEEE ICSC 2007), Irvine, California, September, 2007. IEEE Press, forth-coming.



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