Human-enhanced time-aware multimedia search

From 2011-10-01 to 2014-09-30

Project details

<table>
<thead>
<tr>
<th>Total cost:</th>
<th>Topic(s):</th>
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<tr>
<td>EUR 8 776 297</td>
<td>ICT-2011.1.5 - Networked Media and Search Systems</td>
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<th>EU contribution:</th>
<th>Call for proposal:</th>
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<tr>
<td>EUR 6 834 400</td>
<td>FP7-ICT-2011-7</td>
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<th>Coordinated in:</th>
<th>Funding scheme:</th>
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<tr>
<td>Italy</td>
<td>CP - Collaborative project (generic)</td>
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The multimedia search engine with a human touch.

No search is the same and no knowledge domain requirements are identical, so how can the full potential of search intelligence be exploited?

How can search computation be boosted with intuition, lateral thinking, conceptual associations, trusted opinions and domain knowledge?

How can multimedia search be provided with time-space coherence?

CUBRIK brings together IT and human intelligence, enhancing the search experience to augment precision and the relevance of results when machine intelligence fails or is unable to remove uncertainty. The approach is not to emulate, but rather to incorporate human and social capabilities, from feature extraction to search and validation of a multimedia content and query processing system.

CUBRIK creates a "white box" version of multimedia content and query processing system.

Multimedia search is enhanced to perform entity-based time and space awareness supported by a knowledge base of spatio-temporal entities (locations, events, trends) correlated with rich semantic associations.

This capability is based on programmable pipelines able to asynchronously schedule machine jobs, crowdsourcing and GWAP-based tasks. Results from different types of activities are reconciled to augment the precision and the relevance of results.

Objective

Multimedia search engines today are "black-box" systems. This closed architecture makes it difficult for technology providers, application integrators, and end-users to try out novel approaches for multimedia content and query processing, because there is no place where one can deploy content, components, and processes, integrate them with complementary technologies, and assess the results in a real and scalable environment. The key technical principle of CUBRIK is to create a "white-box" version of a multimedia content and query processing system, by unbundling its functionality into a set of search processing pipelines, i.e., orchestrations of open source and third-party components instantiating current algorithms for multimedia content analysis, query processing, and relevance feedback evaluation. Examples will be pipelines for extracting metadata from media collections using the software mix that best fits application requirements, for processing multimodal queries, and for analysing user's feedback in novel ways. CUBRIK aims at constructing an open platform for multimedia search practitioners, researchers and end-users, where different
classes of contributors can meet and advance the state-of-the-art by joining forces. Important scientific contributions will be the systematic integration of human and social computation in the design and execution of pipelines, and the enrichment of multimedia content and query processing with temporal and spatial entities. On the business side, CUBRIK will endorse an ecosystem where a multitude of actors will concur to implement real application scenarios that validate the platform features in real world conditions and for vertical search domains. The CUBRIK community will bring together technology developers, software integrators, social network and crowdsourcing providers, content owners and SMEs, to promote the open search paradigm for the creation of search solutions tailored to user needs in vertical domains.

Related information

Documents and Publications

- List of exploitable foreground
- List of patents
- Questionnaire on societal implications
- List of publications

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