

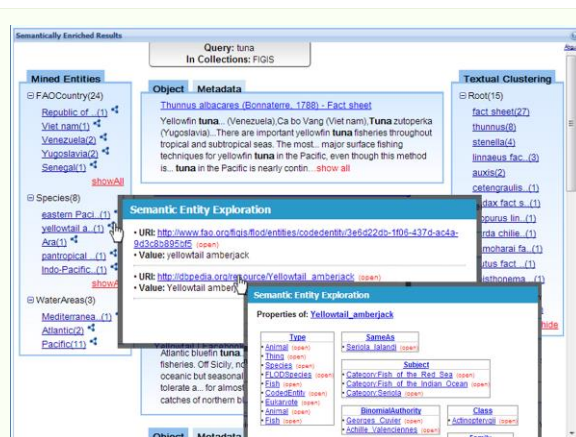


X-Search: An Engine for Semantic Post-Processing of Search Results

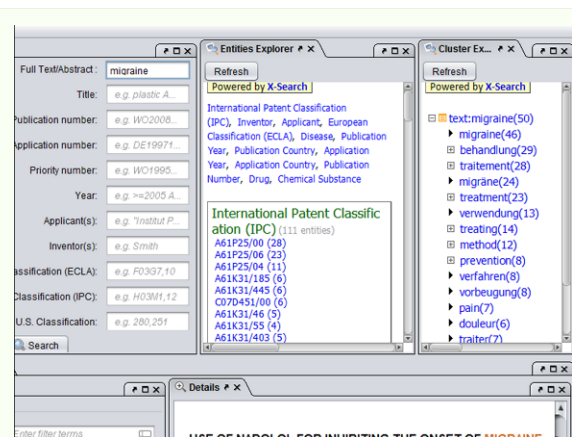
Overview

The integration of the classical Web (of documents) with the emerging Web of Data is a challenging vision. ISL has developed an integration approach during searching which aims at enriching the responses of non-semantic search systems (e.g. professional search systems, web search engines) with semantic information, i.e. Linked Open Data (LOD), and exploiting the outcome for providing an overview of the search space and allowing the users to restrict it. Named entities are used as the “glue” for automatically connecting search hits with LOD. We focus on scenarios where this entity-based integration is performed at query time with no human effort and no a-priori indexing, which is beneficial in terms of configurability and freshness.

X-Search is a meta-search engine that reads the description of an underlying search source (OpenSearch compliant), queries that source, analyzes the returned results in various ways and also exploits the availability of semantic repositories.



X-Search in iMarine

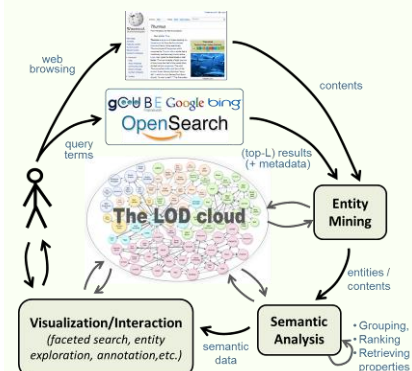


X-Search in PerFedPat

Target Applications

X-Search is applicable over any search system and suitable for the needs of professional search (medical search, patent search, bibliographic search, etc.)

X-Search is **fully configurable** in terms of the supported categories of entities, the underlying Knowledge Bases and the way the system queries the Knowledge Bases.

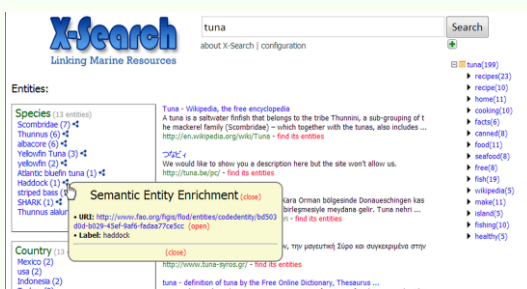


The X-Search process

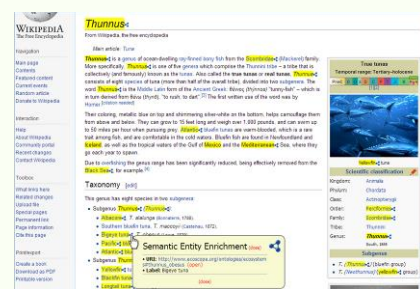
Description

The key features of X-Search are the following:

- **Textual clustering of the results.** Clustering is performed on the textual snippets of the returned results, but clustering of the entire contents is also supported.
- **Named Entity Recognition (NER) on the results.** NER is performed over the textual snippets or over the entire contents. Various methods for ranking the identified entities are supported.
- **Faceted search-like exploration of the results.** The results of clustering and entity mining are visualized and exploited in a faceted and session-based interaction scheme that allows users to restrict focus or information need gradually, and exploits the results of the previous steps.
- **On-click semantic exploration of a Knowledge Base.** X-Search provides the necessary linkage between the mined entities and semantic information (Linked Data). In particular, by exploiting a Semantic Knowledge Base (accessible through a SPARQL endpoint), the user can retrieve more information about an entity by querying and browsing – at real time – this Knowledge Base.
- **Entity discovery and exploration during plain Web browsing.** X-Search also offers entity discovery and exploration while user is browsing on the Web. Specifically, the user is able to inspect the entities of a particular Web page by simply clicking a Bookmarklet (a special bookmark) and then to semantically explore the properties of the identified entities. The user can exploit the aforementioned functionality in real-time, while browsing.



X-Search Web application (over Bing and DBpedia)



X-Search while browsing

Additional Information

Currently X-Search is used in two different contexts: in the **Marine** domain (in the context of the iMarine project, FP7-283644) and in **Patent Search** (in the context of the PerFedPat project, FP7-275522).

For more information please visit <http://www.ics.forth.gr/isl/X-Search/>



X-Search website

Contact details: **Yannis Tzitzikas**
tzitzik@ics.forth.gr
www.ics.forth.gr/isl