

PIMO Population and Semantic Annotation for the Gnows Semantic Desktop

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Outline

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Motivation

■ Semantic Desktop

■ Semantic Web applied to the personal Desktop

- Aim: help user in managing his/her own information

■ Requires:

■ Knowledge Representation

- Ontologies

■ Knowledge Capture

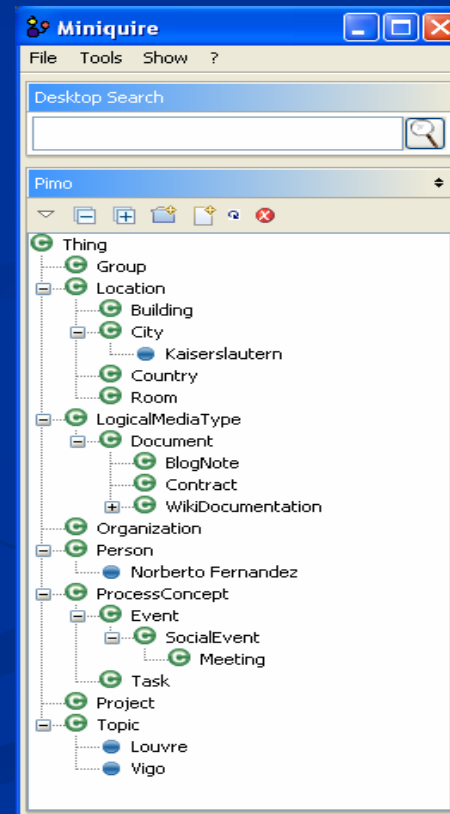
- Ontology population, semantic annotation of desktop resources

■ Knowledge Sharing

- Integration of personal desktops

Context & Aim

- Our work: Gnowsis Semantic Desktop
 - NEPOMUK project
- Knowledge representation
 - PIMO (Personal Information Model Ontology)
- Knowledge Sharing
 - P2P infrastructure
- Knowledge Capture
 - Different strategies
 - Aim of this work



Context & Aim

- What kinds of Knowledge Capture?
 - PIMO Population
 - Add new instances to PIMO
 - PIMO Personalization
 - Add new classes to PIMO
 - Semantic Annotation
 - Link resources with concepts in the PIMO
 - “talks_about” whole resource annotation

Our Approach

- SQA4Desktop
- Main principles:
 - Integrate K-CAP with habitual user actions
 - Querying search engines
 - Tagging (del.icio.us, flickr, youtube,...)
 - Use Wikipedia as source of concepts
- Idea: associate queries/tags with Wikipedia URLs and annotate resources with these associations

Use Case

The screenshot shows a Mozilla Firefox browser window with the address bar displaying `http://127.0.0.1:9993/kaukoluwiki/Wiki.jsp?page=Kaiserslautern`. The page title is "kaukoluwiki: Kaiserslautern". The main content area features the heading "Kaiserslautern" and a paragraph: "Kaiserslautern (help · info) is a city in southwest Germany , located in the Bundesland of Rheinland-Pfalz at the edge of the Palatine Forest (Pfälzer Wald). Kaiserslautern is home to 99,469 people, plus approximately 30,000 NATO military personnel (mainly American) and their families, who often call the city K-Town . The historic center dates to the 9th century and is within easy reach of Paris (459 kilometres) and Luxembourg (159 kilometres).".

Annotations on the page include:

- A circle around the "Main page" link in the left sidebar menu.
- A circle around the "Kaiserslautern" heading.
- A circle around a link in the left sidebar.
- A rectangular box on the right side of the page.
- An oval on the right side of the page.

Discussion

- Why querying/tagging?
 - Habitual user actions
 - Make easy the process to common users
 - Gather information about user interests
 - We want to populate the user personal model

Discussion

- Why Wikipedia?
 - Use search engine for finding the right concepts
 - Easy collaborative knowledge maintenance
 - Edit new Wikipedia pages for new concepts
 - Multidomain
 - Contents of reasonable quality
 - Multilingual links and category links
 - Annotation authoring (adding a link to Wikipedia)

Discussion

- But some drawbacks...
 - Not formal ontology
 - Controlled Vocabulary + Informal is-a (Lassila & McGuinness)
 - Multiple URLs for the same concept
 - Redirections
 - Language dependent URLs
 - Approach: use transitive closure of multilingual links as equivalence relation

Conclusions & Future Lines

- Approach for K-CAP from queries/tags
- Wikipedia as shared conceptualization:
 - Allows a GaV integration (Global View = Wikipedia, but users can have personal ones)
 - Approach for dealing with multiple-URL problem
- Semantic tagging:
 - Tag with Wikipedia URLs, not only with text
- Implementation (Gnowsis 0.9.0):
 - <http://www.it.uc3m.es/berto/SQAPS/>

Conclusions & Future Lines

- Future Lines:
 - Several different sources for PIMO population
 - By hand, with other tools, ...
 - Possible concept duplicate → detection!
 - At the moment only if concepts mapped to Wikipedia
 - Include applications taking advantage of knowledge
 - Integrate with desktop search, not only Web search

**Thank you for your
attention!**

