

The Ontological Engineering Initiative (KA)²

Knowledge Annotation Initiative of the Knowledge Acquisition Community

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(1)

Aufgaben

- 1) Erstellung einer Ontologie für die KA-Gemeinde
- 2) Web-Seiten durch Ausdrücke der Ontologie annotieren
- 3) Webcrawler zum Schliessen auf der Ontologie und den annotierten Web-Seiten.

(3)

Ziel

- Ziel:
 - Erstellung einer Ontologie, die das Wissen der KA-Gemeinde modelliert
 - Dadurch intelligenten Zugriff auf die WWW-Seiten der KA-Gemeinde ermöglichen
- Motivationen:
 - Intelligentes Wissens-retrieval aus dem Web
 - Verteiltes Ontologie-Engineering
 - Klare Einsicht in die KA-Gemeinde

(2)

1) Erstellung der Ontologie

- Ontolingua
- ODE
- Entwurfsentscheidungen
- Verteilter Entwicklungsprozess

(4)

ODE

Concept name	Synonym	Description	Instances	Attributes
Person				Photo First-name Last-name Address Email ...
Researcher			Nicola Guarino Enric Plaza Tom Gruber Rose Dieng Stefan Decker Nigel Shadbolt ...	Research-interest Member-of Cooperates-with ...
PhD-Student			Mariano Fernandez Lopez Remco Straatman	Has-Supervisor ...
...

(5)

Entwurfsentscheidungen

Class hierarchy (10 classes defined):

```

Person
  Employee
    Academic-Staff
      Lecturer
      Researcher
    Administrative-Staff
      Secretary
    Technical-Staff
  Student
    Phd-Student
    
```

23 relations defined:

Address, Affiliation, Cooperates-With, Editor-Of, Email, First-Name, Has-Publication, Head-Of-Group, Head-Of-Project, Last-Name, Member-Of-Organization, Member-Of-Program-Committee, Member-Of-Research-Group, Middle-Initial, Organizer-Of-Chair-Of, Person-Name, Photo, Research-Interest, Secretary-Of, Studies-At, Supervises, Supervisor, Works-At-Project

(6)

Verteilter Entwicklungsprozess

```

Class: research-topic
Attributes:
  Name: <string>
  Description: <text>
  Approaches: <set-of keyword>
  Research-groups: <set-of research-group>
  Researchers: <set-of researcher>
  Related-topics: <set-of research-topic>
  Sub-topics: <set-of research-topic>
  Events: <set-of events>
  Journals: <set-of journal>
  Projects: <set-of project>
  Application-areas: <text>
  Products: <set-of product>
  Bibliographies: <set-of HTML-link>
  Mailing-lists: <set-of mailing-list>
  Webpages: <set-of HTML-link>
  International-funding-agencies: <funding-agency>
  National-funding-agencies: <funding-agency>
  Author-of-ontology: <set-of researcher>
  Date-of-last-modification: <date>
    
```

(7)

2) Annotation der Web-Seiten

```

<html>
<head><TITLE> Richard Benjamins </TITLE>
<a ONTO="page:Researcher"> </a>
</head>

<H1> <A HREF="pictures/id-rich.gif">
<IMG align=middle SRC="pictures/richard.gif"></A>
<a ONTO="page[photo=href]"
HREF="http://www.iiia.csic.es/~richard/pictures/richard.gif" ></a>
<a ONTO="page[firstName=body]">Richard</a>
<a ONTO="page[lastName=body]">Benjamins </a>
</h1> <p>

<A ONTO="page[affiliation=body]" HREF="#card">
Artificial Intelligence Research Institute (IIIA)</A> -
<a href="http://www.csic.es/">CSIC</a>, Barcelona, Spain <br>
and <br>
<A ONTO="page[affiliation=body]" HREF="http://www.swi.psy.uva.nl/">
Dept. of Social Science Informatics (SWI)</A>
-
<A HREF="http://www.uva.nl/uva/english/">UvA</A>, Amsterdam, the
    
```

(8)

3) Webcrawler

- Ontobroker

- FLogic
- Ontocrawler
- Schliessmechanismus
- Anfrage-Interface

(9)

Anfrage-Interface

```
Schema: O:C[A->>V]
```

```
FORALL R <- R:Researcher
```

```
FORALL Obj, LN, EM <-  
  Obj:Researcher[firstName->>"Richard";  
                 lastName->>LN; email->>EM]
```

```
Obj = "http://ww.iiia.csic.es/..."
```

```
LN = "Benjamin"
```

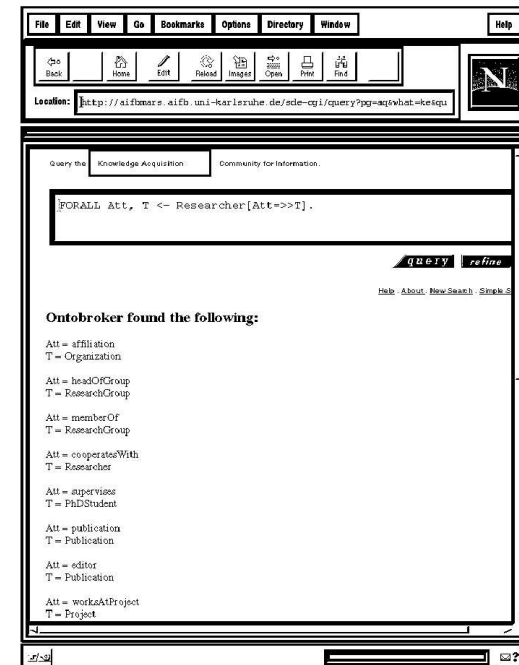
```
EM = "mailto:richard@..."
```

(11)

O-Seiten

```
-----  
http://www.iiia.csic.es/~richard/index.html  
http://www.iiia.csic.es/~richard/activities.html  
http://www.iiia.csic.es/~richard/interests.html  
http://www.iiia.csic.es/~richard/projects.html  
http://www.iiia.csic.es/~richard/publications/pub-type.html  
http://www.iiia.csic.es/~richard/cv/cv.html  
-----
```

(10)



(12)

Organisation der Initiative

- Koordinierende Agenten
 - Ontologie-Agent, Webtool-Agent, Manager-Agent, Rekrutierungs-Agent, Annotations-Agent, Ontobroker-Agent, "Window on USA"-Agent
- "Kluge Agenten" (wise-agents)
- Provider-Agenten
- Ontopic-Agenten
- Geschäft-Agenten (business agents)

(13)

```
<head>
<title>Stefan Decker</title>
</head>

<body BGCOLOR="white" LINK="#5555FF" ALINK="#005544" VLINK="#AA0000">
<!--
  <rdf:RDF xmlns:rdf = "http://www.w3.org/1999/02/22-rdf-syntax-ns#"
    xmlns:swrc = "http://www.semanticweb.org/ontologies/swrc-onto-2000-09-
10.daml#"
    xmlns:a = "https://www.daml.org/actionitems/actionitems-20000905.rdfs#">

  <rdf:Description about="https://www.daml.org/actionitems/12.rdf">
    <a:state>closed</a:state>
    <a:Action>
      <a:status>available at http://www-db.stanford.edu/~stefan</a:status>
      <a:date>2000-10-31</a:date>
      <a:by>stefan@db.stanford.edu</a:by>
    </a:Action>
  </rdf:Description>

  <swrc:AcademicStaff rdf:ID="person_stefan_decker">
    <swrc:name>Stefan Decker</swrc:name>
    <swrc:firstName>Stefan</swrc:firstName>
    <swrc:lastName>Decker</swrc:lastName>
    <swrc:email>stefan@db.stanford.edu</swrc:email>
    <swrc:phone>+1 650 723 1422</swrc:phone>
    <swrc:fax>+1 650 - 725-2588</swrc:fax>
    <swrc:homepage>http://www-db.Stanford.EDU/~stefan/</swrc:homepage>
  </swrc:AcademicStaff>

-->
</rdf:RDF>
```

(15)

Schluss

- Zusammenfassung und Ausblick des Artikels
- Bemerkungen von mir

(14)