Semantic Annotation of the Ontolog Community Environment Ontology Summit 2014

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Background

- The Ontolog collaborative work environment (of which its wiki is an integral part) has always served as the community's dynamic knowledge repository.

- The migration of Ontolog Community wiki content (in particular, the entire body of knowledge from previous OntologySummit seasons) from the OntologWiki (purple wiki) to the new OntologPSMW (purple semantic mediawiki) is an ongoing effort with these goals:

  - Organization of the Ontolog Community wiki content in a way that encourages and facilitates access to and (re)use of the material

  - Use of the ICOM ontology to semantically annotate the Ontolog Community wiki content using a standard ontology

  - Use of these semantic annotations to provide and enable new functionality and views of the content

Hackathon Goals

- Continuation of the successful "Content Hack" in 2013 but with a new theme and objectives

- Development of code to extract calendar and related scheduling data from the Ontolog Community wiki pages and convert this data to ICOM-compatible annotations

- Development of code, constructs, queries, user-interfaces, etc. that will present the semantically annotated Ontology Summit and Ontology Community content in interesting ways

- Development of code and constructs for interoperation of the Ontolog Community wiki with calendar tools

- Part of the development of a semantic ecosystem

Ontolog Community Environment

- Website platform is Purple Semantic MediaWiki

- The Ontolog Community website is being migrated to a semantically annotated wiki based on PSMW.

- So far the pages have been categorized, but other data has yet to be extracted.

  – Date, starting time, duration

  – Session chairs, speakers, participants

  – Links to slides, audio recording

Example of a Ontolog Wiki page

ConferenceCall 2014 02 20

WikiHomePage | RecentChanges | Page Index   Kenne

OntologySummit2014 session-06: Synthesis-I & Communique Discussion-I - Thu 2014-02-20   (45M6)

- Summit Theme: **OntologySummit2014**: **"Big Data and Semantic Web Meet Applied Ontology"**   (45M7)

- Session Topic: **OntologySummit2014 Synthesis-I & Communique Outline Discussion**   (46PC)

- Session Co-chairs: **Dr. LeoObrst and Dr. ToddSchneider**   (46PD)

Program: (46PE)

- **Dr. LeoObrst, Professor MichaelGruninger** (in absentia) & **Dr. ToddSchneider** - **"Opening, General Assessment & Fine-tuning of OntologySummit2014 Direction & Approach"** ... slides   (46PF)
- **Ms. AndreaWesterinen, Dr. GaryBergCross, Mr. MikeBennett** - **Track A: Common Reusable Semantic Content - Synthesis-I** ... slides   (46PG)
- **Dr. ChristophLange, Professor AlanRector** - **Track B: Making use of Ontologies: Tools, Services, and Techniques - Synthesis-I** ... slides   (46PH)
- **Dr. MatthewWest, Professor PascalHitzler, Professor KrzysztofJanowicz** - **Track C: Overcoming Ontology Engineering Bottlenecks - Synthesis-I** ... slides   (46PI)
- **Professor KenBaclawski, Professor AnneThessen** (in absentia) - **Track D: Tackling the Variety Problem in Big Data - Synthesis-I** ... slides   (46PJ)
- The Track Syntheses is followed by an **Open Discussion on what are the key take home messages, and positions we want to assume, as the Summit community**   (46PK)
- **Dr. LeoObrst & Professor MichaelGruninger** (in absentia) - **Approach to the OntologySummit2014 Communique and Proposed Draft Outline** ... slides   (46PL)
- The Draft Communique Outline presentation is followed by an **Open Discussion towards finalizing the 2014 Communique Outline**   (46PM)

Page Source of the Ontolog Wiki Page

```
= OntologySummit2014 session-06: Synthesis-I & Communique Discussion-I - Thu 2014-02-20 =

* Summit Theme: '''OntologySummit2014: "Big Data and Semantic Web Meet Applied Ontology"'''

* Session Topic: '''OntologySummit2014 Synthesis-I & Communique Outline Discussion'''

* Session Co-chairs: '''Dr. LeoObrst and Dr. ToddSchneider'''

Program:

* '''Dr. LeoObrst, Professor MichaelGruninger''' ''(in absentia)'' & '''Dr. ToddSchneider''' -
 "'''Opening, General Assessment & Fine-tuning of OntologySummit2014 Direction & Approach'''" ...
```

This is the first part of what the page looks like when it is being edited.
The next slide shows an example of a PSMW page.

Big Data and Semantic Web Meet Applied Ontology

Track D Session 1 [edit]

Part of the Ontology Summit 2014

Co-champions: Ken Baclawski and Anne Thessen

Speakers:

- Eric Chan
- Ruth Duerr
- Nathan Wilson

Categories:
- Meeting
- OntologySummit2014

VIEWS

Page

Discussion

Edit

History

Delete

Move

Protect

Watch

Refresh

PERSONAL TOOLS

29 April 2

7

Annotated Page Source

Link to another wiki page

```
== Track D Session 1 ==
Part of the [[Ontology Summit 2014]]

Co-champions: [[champion::Ken Baclawski]]
and [[champion::Anne Thessen]]
Speakers:
*  [[speaker::Eric Chan]]
*  [[speaker::Ruth Duerr]]
*  [[speaker::Nathan Wilson]]


[[Category:Meeting]]
[[Category:OntologySummit2014]]
```

Properties of this page

Categories of this page

This category determines the look and feel (skin) of the wiki page.

Dynamic Content Page

```
== Ontology Summit 2014 Events ==
{{#ask: [[Category:OntologySummit2014]]
        [[Category:Event]]
 | ?champion
 | ?speaker
 | format=broadtable}}
```

Page selection criteria

Printout statements

Format

Ontology Summit 2014 Events

Big Data and Semantic Web Meet Applied Ontology

Ontology Summit 2014 Events   [edit]

	⬍ **Champion**	⬍ **Speaker** ⬍
Track D Session 1	Ken Baclawski Anne Thessen	Eric Chan Ruth Duerr Nathan Wilson

Category:
- OntologySummit2014

VIEWS

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* '''Dr. LeoObrst, Professor MichaelGruninger''' ''(in absentia)'' & '''Dr. ToddSchneider''' -
 "'''Opening, General Assessment & Fine-tuning of OntologySummit2014 Direction & Approach'''" ...
```

Current page source

Annotated page source

```
= OntologySummit2014 session-06: Synthesis-I & Communique Discussion-I - [[has date::Feb 20 2014]] =

[[Category:OntologySummit2014]] [[Category:Meeting]]

* Summit Theme: '''{{#show: OntologySummit2014 | ?theme}}'''

* Session Topic: '''[[topic::OntologySummit2014 Synthesis-I & Communique Outline Discussion]]'''

* Session Co-chairs: '''Dr. [[chair::LeoObrst]] and Dr. [[chair::ToddSchneider]]'''

Program:

* '''Dr. [[panelist::LeoObrst]], Professor MichaelGruninger''' ''(in absentia)'' & '''Dr. [[panelist::ToddSchneider]]''' -
 "'''Opening, General Assessment & Fine-tuning of OntologySummit2014 Direction & Approach'''" ...
```

Semantics of Semantic MediaWiki

- Resources are the wiki pages

- Classes are called "categories"

  - Each category has its own wiki page

- Categories have a subcategory hierarchy

- Properties are supported

  - Datatype properties

  - Object properties (values are wiki pages)

  - Each property has its own wiki page

- Mapping from RDF to SMW

  - Software has been developed, but is relatively limited.

Hackathon Software

- Software uses the MediaWiki web service API

- The pages to be annotated are the ones that have a specified category.

- The page source of each page is downloaded, parsed and updated.

- The Google calendar web service was also used to update the calendar entries.

Participants

- KenBaclawski host

- PeterYim Requirements

- TejasParikh Systems support

- SankalpaKulkarni Crawl the wiki site

- AkshayHathwar Download page source from the wiki

- GauravDurgule Extract properties from the page (day of the meeting, time of the meeting, title of the meeting, etc.)

- SrinivasVaradharajan Format the properties as SMW properties and JSON

- RohithVallu Google calendar web service code

- VivekChouhan Integrate the software components and update the page.

Current Status

- Prototype has been developed
  - Encountered problems with authentication.
  - Needs to be extended to detect and to add more properties.

- Students are still active
  - Could not continue working until after the end of the term.
  - Part of a larger project for developing a semantic ecosystem

Semantic Ecosystem

- Integrated platform for collaborative development of semantically annotated documents

  - communiques

  - ontologies

  - standards

- Organization of content in a semantically structured information model

  - Support for modularization

  - Support for reuse

- Establish connections between related documents

Semantic Ecosystem

- Maintain consistency across documents

    - Support testing and verification

- Generate many representations

    - Visual representation

    - Navigation framework

    - Software generation

    - Web service API generation

- Lifecycle support

    - Email notifications of upcoming deadlines