

 POLITECNICO DI MILANO

Dipartimento di
Elettronica e Informazione

AIRWiki: a Semantic Wiki for the AIRLab

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http://airwiki.elet.polimi.it/mediawiki/index.php/Social_Software_and_Semantic_Web

AIRWiki

- A wiki built on top of MediaWiki...
 - quick and easy to use
 - syntax is the same of Wikipedia
 - some changes to hide contents from outside (ask if you want your AIRWiki page to be visible from anywhere!)
- ...and an extension called Semantic MediaWiki
 - structured representation of knowledge
 - makes it easier to add info
 - avoids replications
 - provides search functionality
 - ...

RDF

- Resource Description Framework
 - W3C recommendation (2004)
 - Graph data model
 - Abstract syntax based on the concept of *triple*
- RDF is based on the following ideas:
 - things being described have *properties* which have *values*
 - and resources can be described by making *statements* that specify those properties and values
- RDF *triples* (subject, predicate, object)

`http://www.example.org/index.html`

Subject

(has a) **creator**

Predicate

(whose name is) **Jon Smith**

Object




Semantic MediaWiki at a glance

- <http://semantic-mediawiki.org>
- Categories
 - a MediaWiki built-in feature
 - i.e. `[[Category:Student]]`
- Properties
 - i.e. `[[hasCapital::Berlin]]`,
`[[hasAdvisor::User:DavideEynard]]`
 - Property types: Page, String, Number, Boolean, Date, Geographic coordinate, Temperature, ...
- Where is the subject?
 - The page is...
 - ... or, better, what is described inside it

Browsing interfaces

- Factbox
 - Appears at the bottom of the page (can be disabled)
 - Left column: property name (*predicate*)
 - Right column: property value (*object*)
 - The “eye” opens a *semantic browser* for the resource
 - The “lens” opens a *SearchByProperty* page
 - The page can be exported in RDF by clicking on “RDF feed”

Facts about Browsing interfaces ⓘ

RDF feed 

From version 1.3 + 

Language code en + 

Master page **Browsing interfaces** + 

Browsing interfaces

- Semantic Browsing
 - Given a page, all the relations from and to that page are shown

Browse wiki

User: Davide Eynard

Email eynard@elet.polimi.it + 🔍

Foaf:mbox eynard@elet.polimi.it + 🔍

HasResArea [Social Software and Semantic Web](#) + ⓘ

Categories [Researcher](#) + ⓘ

[hide properties that link here](#)

[AnnotationTest](#) + ⓘ

A: author

[CarloMiglierina](#) + ⓘ, [EmanueleScapinello](#) + ⓘ, [FabioMarfia](#) + ⓘ, [FabioPanozzo](#) + ⓘ, [GiuliaRoda](#) + ⓘ, [MarcoDola](#) + ⓘ, [MatteoRebulla](#) + ⓘ, [MattiaRegazzoni](#) + ⓘ, [NicholasAngeloCrespi](#) + ⓘ, [SimonePriamo](#) + ⓘ

HasAdvisor

[A Unifying Framework for Semantic Annotation](#) + ⓘ, [A firefox extension for semantic annotations](#) + ⓘ, [Annotation aggregators from social applications](#) + ⓘ, [Automatic generation of domain ontologies](#) + ⓘ, [Data Extraction From Wikis](#) + ⓘ, [Description Logics Extensions](#) + ⓘ, [Design and development of a semantic wiki engine](#) + ⓘ, [Detecting patterns in ontology usage](#) + ⓘ, [Extending a wiki with semantic templates](#) + ⓘ, [Extraction](#) + ⓘ, [FolksOnt](#) + ⓘ, [JOFS](#) + ⓘ, [SeManTik](#) + ⓘ, [Semantic wiki extensions with context ontologies](#) + ⓘ, [SpeakinAbout](#) + ⓘ, [TaggyFS](#) + ⓘ, [Tagonto](#) + ⓘ, [Use case design and implementation for semantic annotations](#) + ⓘ, [Using WordNet to support navigation in a folksonomy](#) + ⓘ

PrjTutor

Browsing interfaces

- Special pages
 - Special:SearchByProperty

HasAdvisor User:DavideEynard

A list of all pages that have property "HasAdvisor" with value "User:DavideEynard"

- [SimonePriamo](#) + ⓘ
- [NicholasAngeloCrespi](#) + ⓘ
- [MattiaRegazzoni](#) + ⓘ
- [MatteoRebulla](#) + ⓘ
- [MarcoDola](#) + ⓘ
- [GiuliaRoda](#) + ⓘ
- [FabioPanozzo](#) + ⓘ
- [EmanueleScapinello](#) + ⓘ

Property Value

- Special:PageProperty

User:DavideEynard HasAdvisor

- [MarcoColombetti](#) + ⓘ

From page Property

Browsing interfaces

- Semantic search with Special:Ask
 - More complex, but much more powerful

Query	Additional printouts (optional)				
<pre>[[hasAdvisor::User:MarcoColombetti]] [[Category:PhD]]</pre>	<pre>?Foaf:mbox </pre>				
[Add sorting condition] <input type="button" value="Find results"/> Hide query Querying help					
<p style="text-align: center;">Previous Results 1- 1 Next (20 50 100 250 500)</p> <table border="1"> <thead> <tr> <th>DavidLaniado</th> <th>Foaf:mbox</th> </tr> </thead> <tbody> <tr> <td></td> <td>david.laniado@elet.polimi.it</td> </tr> </tbody> </table> <p style="text-align: center;">Previous Results 1- 1 Next (20 50 100 250 500)</p>		DavidLaniado	Foaf:mbox		david.laniado@elet.polimi.it
DavidLaniado	Foaf:mbox				
	david.laniado@elet.polimi.it				

Templates and Semantic Templates

- Writing semantic wikitags is not that hard...
 - ... but it is not that easy too!
- Especially in very complex pages, a simpler interface has to be taken into account
 - Inspiration: MediaWiki templates

- Example:

```

{{Student
|category=Student
|firstname=Pinco
|lastname=Pallino
|photo=PincoPallino.jpg
|email=pinco@palli.no
|projectpage=Super Semantic Everything
|advisor=DavideEynard;DavidLaniado;
|status=active
}}

```

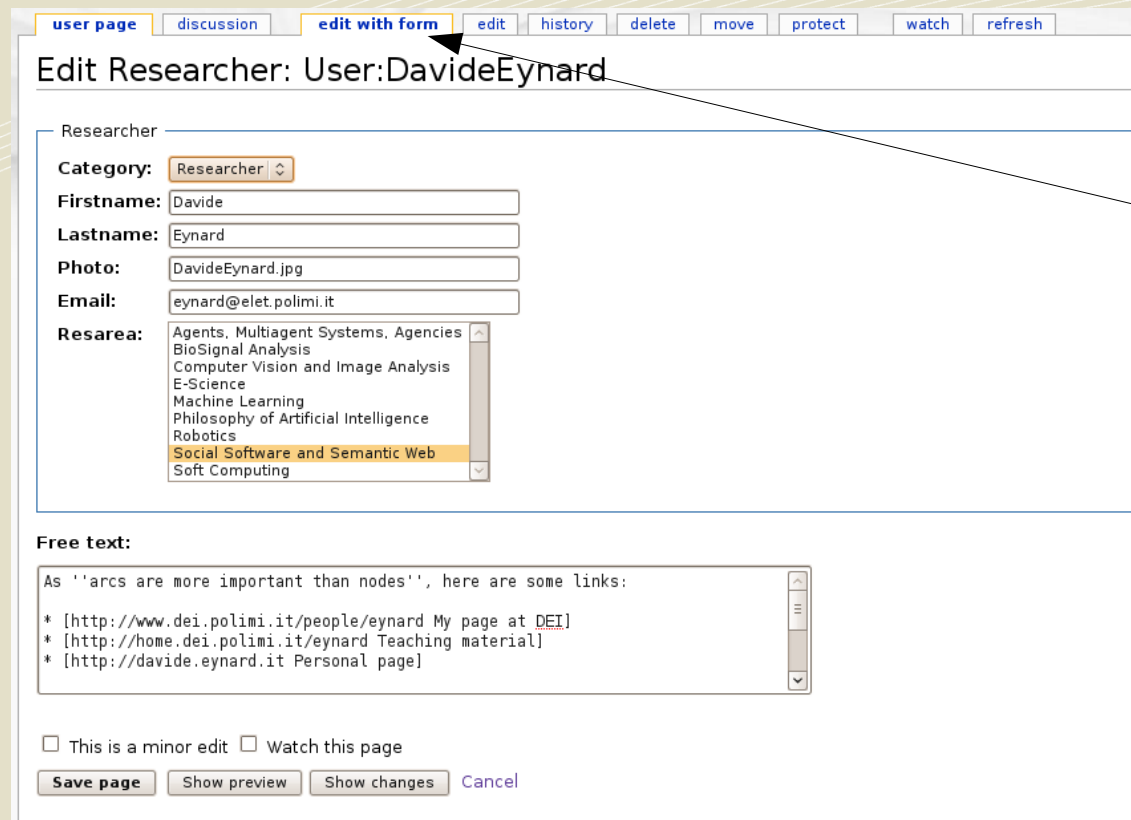
- ... where is the semantics?
 - check the Template code!



City of Palo Alto	
	
University Avenue	
	
Location in Santa Clara County and the state of California	
Coordinates: 37°25′45″N 122°8′17″W﻿ / ﻿37.42917°N 122.13806°W﻿ / 37.42917; -122.13806	
Country	United States
State	California
County	Santa Clara
Government	
 - Mayor	Peter Drekeimer ^[1]
Area	
 - Total	25.6 sq mi (66.4 km ²)
 - Land	23.7 sq mi (61.3 km ²)
 - Water	2.0 sq mi (5.1 km ²)
Elevation	30 ft (9 m)
Population (2007)	
 - Total	61,200
 - Density	2,475.3/sq mi (955.8/km ²)
Time zone	PST (UTC-8)
 - Summer (DST)	PDT (UTC-7)

Semantic Forms

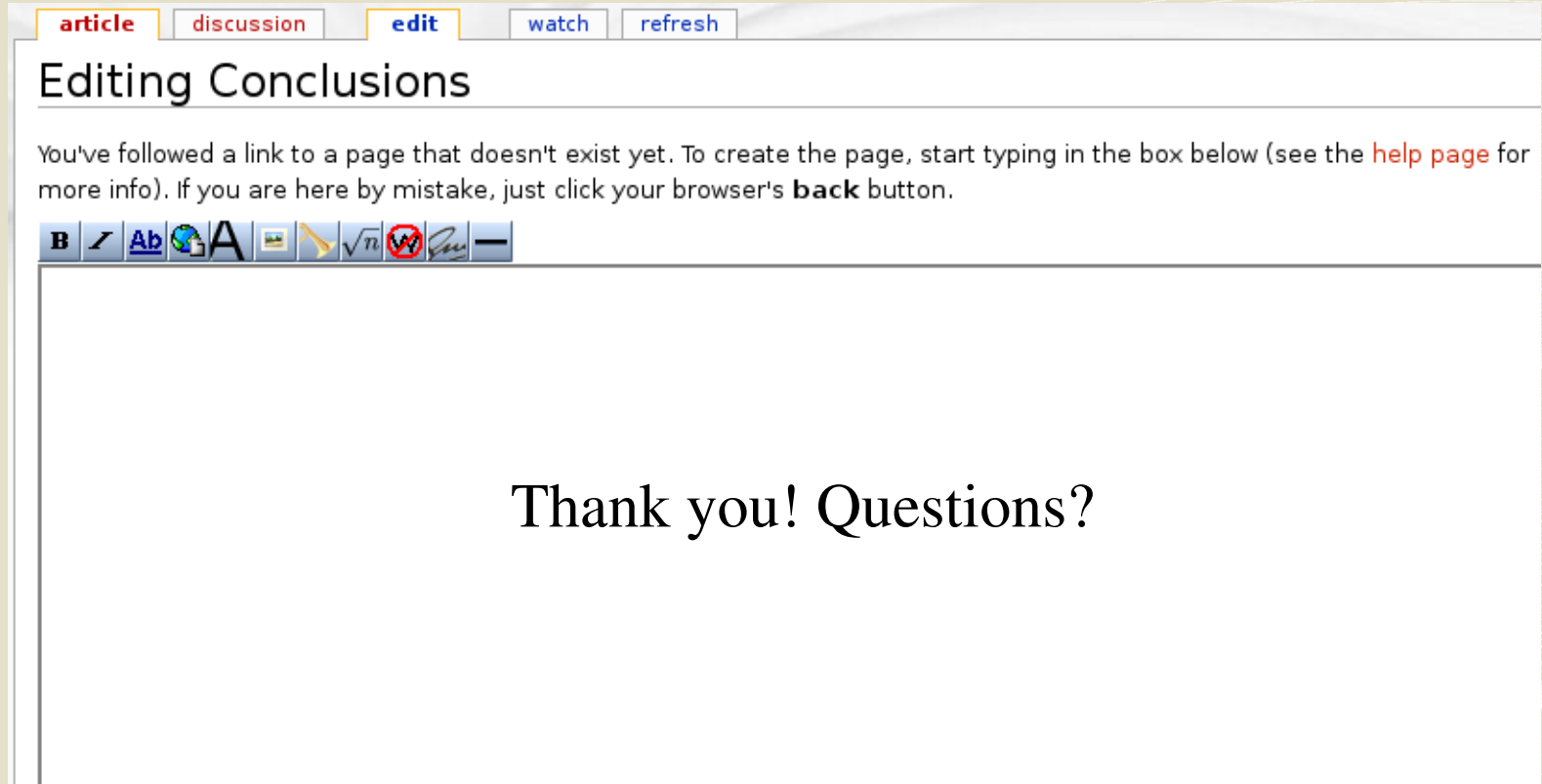
- A Semantic MediaWiki extension
- Allows you to easily build a form out of a template
 - Forms are initially built automatically, then you can fine tune them
 - How? Just edit their wikicode!



The screenshot shows the 'Edit with form' interface for a user page. At the top, there are navigation tabs: 'user page', 'discussion', 'edit with form' (highlighted), 'edit', 'history', 'delete', 'move', 'protect', 'watch', and 'refresh'. Below the tabs is the title 'Edit Researcher: User:DavideEynard'. The main form area contains several fields: 'Researcher' (a text input), 'Category' (a dropdown menu set to 'Researcher'), 'Firstname' (input: 'Davide'), 'Lastname' (input: 'Eynard'), 'Photo' (input: 'DavideEynard.jpg'), 'Email' (input: 'eynard@elet.polimi.it'), and 'Resarea' (a list box with 'Social Software and Semantic Web' selected). Below the form is a 'Free text' section with a text area containing links. At the bottom, there are checkboxes for 'This is a minor edit' and 'Watch this page', and buttons for 'Save page', 'Show preview', 'Show changes', and 'Cancel'. An arrow points from the 'edit with form' tab to the 'Resarea' list box.

Note the
“Edit with form”!










The end



[article](#) [discussion](#) [edit](#) [watch](#) [refresh](#)

Editing Conclusions

You've followed a link to a page that doesn't exist yet. To create the page, start typing in the box below (see the [help page](#) for more info). If you are here by mistake, just click your browser's **back** button.

B *I* [Ab](#)   **A**       

Thank you! Questions?