



# ***PloneOntology***


## ***Collaborative Keywordmanagement***

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1. Keyword Management Problems
  2. The Approach of PloneOntology
  3. How to Use it



# **Keyword Managing Problems**

# Keywords vs. Concepts

Classification is about relating things to concepts, not words!

”Zope” - one word, (at least) two concepts

- A highly recognized and reputable fish (*Abramis ballerus*)
- A web application server striving for world domination

*A moderately large fish, the Zope has a life span of 18 years.  
It grows slowly, ...*

<http://earth.leeds.ac.uk/jackson/shoal/z.html>



## ***Multiple Expressions, same concept***

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A collection of keywords from scientific papers all containing the phrase "**visual cortex**":

- Visual system
- V1
- Visual cortex
- Vision
- Primary visual cortex

## ***Multiple Expressions (2)***

The same applies for abbreviations, translations, ...

- Principal component analysis
- PCA
- Hauptkomponentenanalyse
- (add translation to your favourite language here)



# *A matching problem*

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Without a semantic understanding, there's no way to match identical or similar concepts.

Unsupervised learning algorithms cluster content into groups, but don't tell what the cluster is about.

For supervised learning you need a (preferably large) training set

In any case you'll probably end having natural language processing on your todo list.



# ***Ontologies to the rescue***

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The needed semantic understanding is provided in a so called **ontology**.

*An ontology is a specification of a conceptualization.*

*Tom Gruber, Stanford*

You can think of it as a graph with concepts as the nodes.





## ***Buzzword Alarm***

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Ontologies are recognized as a crucial part of the *Semantic Web*.

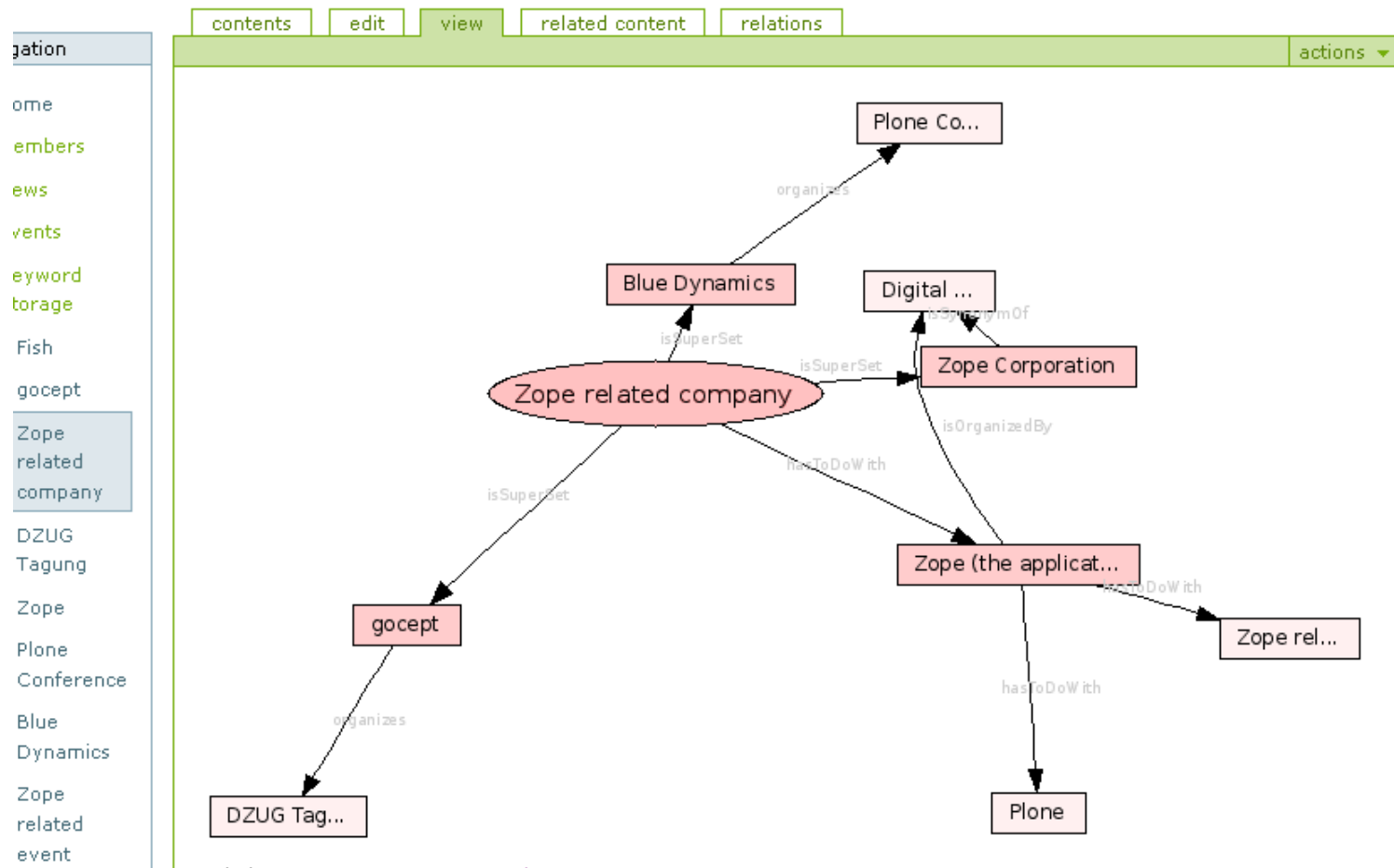
Fortunately Tim Berners Lee is a big fan of Python.



# PloneOntology's Approach

# Keywords are content

Provide a vizualization for the local ontology



# Keywords are content (2)

Provide links to content related to the keyword

The screenshot displays a web application interface. At the top, there is a navigation bar with tabs: 'home', 'members', 'news', 'events', and 'keyword storage'. Below this, a breadcrumb trail reads 'you are here: home → keyword storage → zope related company'. On the left side, a 'navigation' sidebar lists various items: 'Home', 'Members', 'News', 'Events', 'Keyword Storage', 'Fish', 'gocept', 'Zope related company' (which is highlighted), 'DZUG Tagung', 'Zope', 'Plone Conference', and 'Blue Dynamics'. The main content area has a sub-navigation bar with tabs: 'contents', 'edit', 'view', 'related content' (which is active), and 'relations'. The title of the main section is 'Content related to Zope related company'. Below the title, a list of related content items is shown, each with a numerical value and a link icon:

- (0.646875) [Keynote of Jim Fulton at PloneConf 2005](#)
- (0.5) [The AlphaFlow Manual](#)
- (0.5) [How gocept once caught a real Zope](#)
- (0.421875) [Programme of the Plone Conference](#)
- (0.1265625) [The Castle Goldegg Sprint List](#)
- (0.10546875) [Programm der DZUG Tagung](#)



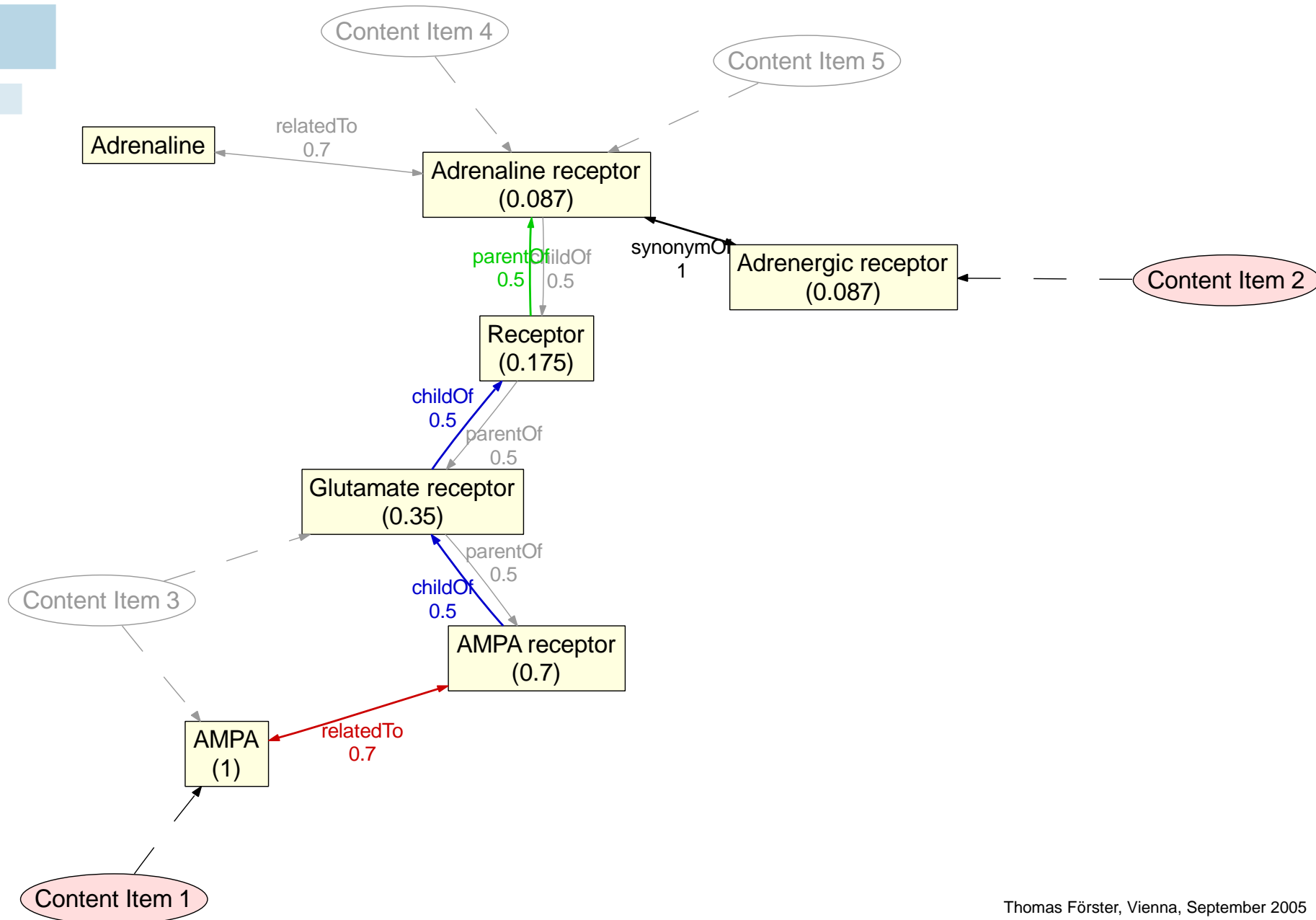
## *Using 'Relations' for the references*

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The classification is just keywords referenced by content objects.

- 'Relations' allows putting constraints and attributes to the graph edges
- Inverse impicators are great for e.g. parent/child relationships

# A simple relevancy ranking search





# Usage

# Classification (user side)

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**Your changes have been saved.**

## Edit Classification Example

[default] [classification]

**Keyword**  
classify your content here if your browser has javascript

Plone d

**Keywords**

- Plone
- Plone Conference
- Plone Foundation

☐ Plone Conference

use this in order to search and select keywords if the

by [admin](#) — last modified 2005-09-21 01:59

- separate step during content creation/edit
- optional
- Sarissa provides search comfort



## *Classification (developer side)*

- works only with Archetypes
- need to include some fields into content type
- already provided as ready to use Schema to include

```
from Products.PloneOntology.ClassificationSchema  
    import ClassificationSchema
```



```
myschema = BaseSchema + ClassificationSchema + Schema(...
```



# ***Ontology Management via Proposals***

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- New terms and connections start out as a proposal, pushed through a reviewing workflow.
- On acception proposals are converted to Keywords resp. references between them.
- This allows to model draft ontologies before integration into main ontology.



PloneOntology has OWL (Web Ontology Language) import/export support.

**Zope fish** <http://earth.leeds.ac.uk/jackson/shoal/z.html>

**Ontology Intro** <http://www-ksl.stanford.edu/kst/what-is-an-ontology.html>

**Semantic Web** <http://www.w3.org/2001/sw/>

**Semantic Web Intro** <http://infomesh.net/2001/swintro/>

**OWL Specification** <http://www.w3.org/2004/OWL/>

**.owl Ontology collection** <http://www.schemaweb.info/default.aspx>

**Relations** <http://svn.plone.org/view/archetypes/Relations/>



# ***Thanks***

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**Stefan Kröger** → Proposals, Sarissa Integration and GraphViz support

**David Baehrens** → OWL Import/Export and Relations backend

And of course you for listening...