

# Woogle4MediaWiki: From Searchers to Contributors

Hans-Jörg Happel  
FZI Research Center for Information Technology  
Karlsruhe, Germany  
happel@fzi.de

## ABSTRACT

This demo presents Woogle4MediaWiki, an extension for MediaWiki, which improves its core search functionality and introduces Wiki-style collaboration about information needs (each search query may have its own Wiki page) and result lists. Furthermore, aggregate statistics from the search logs are shown in pop-up windows attached to “red links” to guide users contributing new information.

## Categories and Subject Descriptors

H.3.3 [Information Storage and Retrieval]: Information Search and Retrieval—*search process*; H.5.3 [Information Interfaces and Presentation]: Group and Organization Interfaces

## General Terms

Documentation, Design, Experimentation, Human Factors

## Keywords

Wikis, Knowledge Sharing, Social Search

## 1. FEATURES

The Woogle4MediaWiki demo will involve three major parts: the core (social) search features, knowledge sharing features and finally an outlook towards further improvements.

### 1.1 Social Search

The baseline search features of MediaWiki<sup>1</sup> are limited. First, the default search relies on the database backend, which, in the case of MySQL, leads to meaningless rankings of search results and does not allow for state-of-the-art features such as wildcard queries. We consider this a serious shortcoming, since Wikis can be considered highly relevant entry points for seeking information in communities or organizations [5].

Moreover, the history of the Web has given rise to highly automated, algorithm-based search approaches (e.g. Altavista, Google) but also to human-powered, partially collaborative solutions (e.g. early Yahoo-style catalogue sites or recent social bookmarking sites). Surprisingly, Wiki engines have typically

adopted the former approach, isolating the search process as a non-collaborative activity within the Wiki environment.

Woogle addresses this issue in several ways. First, it integrates state-of-the-art search technology based on the Apache/Zend Lucene projects<sup>2</sup>. This is combined with various means for Wiki-style collaboration.

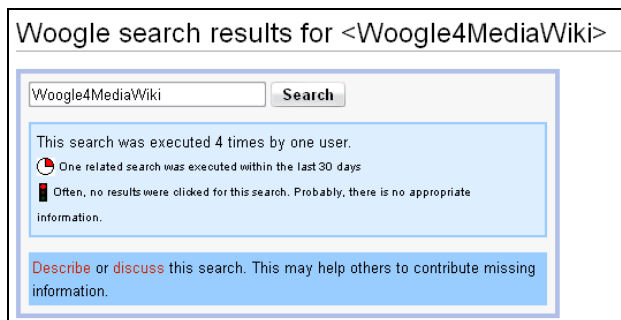


Figure 1: Extended header of a Woogle search result page

Second, each individual search query can be made a distinct Wiki-page in a “Woogle:”-namespace, allowing for Wiki-style linking, editing, discussing, and even “watching” query pages (notifying users about new search results). Each search result page (which we call “Woogle-Page”) thus consists of a search form, a small section displaying the Wiki-text of the page and a list of search results (c.f. Figure 1). In the Wiki-text section, users may describe their information need in more detail or provide “social did-you-mean” redirects to other search terms or information outside the Wiki. Thus, a small “Wikipedia of search terms” which describes queries in more detail can be created.

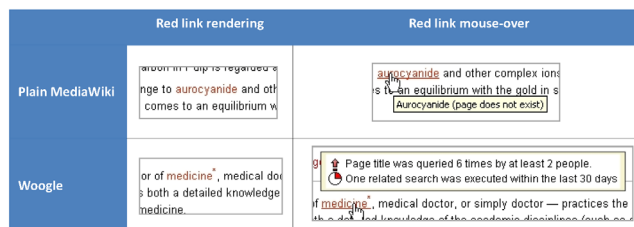


Figure 2: “Red links” in plain MediaWiki and with Woogle

### 1.2 Knowledge Sharing

Woogle is not limited to search. An important part of the Wiki philosophy is motivating people to “be bold”<sup>3</sup> and to help improving collaboratively maintained content. However, interface support for this endeavor is limited. Considering e.g. so-called “red

<sup>1</sup> <http://www.mediawiki.org>

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<sup>2</sup> <http://lucene.apache.org> / <http://framework.zend.com>

<sup>3</sup> [http://en.wikipedia.org/wiki/Wikipedia:Be\\_bold](http://en.wikipedia.org/wiki/Wikipedia:Be_bold)

links”, denoting desired pages which do not yet exist, users do not get direct cues on the need behind – i.e. all red links appear to be equal at a first glance.

Therefore, Woogle adds pop-up windows which summarize the “need” for a particular red link (c.f. Figure 2). Information displayed includes the number of inlinks and search statistics such as the number of users with related information needs and the quantitative volume and recency of these needs. Similar information is also shown on search result pages, allowing searchers for seamlessly switching to a contributor role in the case of missing or bad search results.

## 2. FUTURE DEVELOPMENT

Besides these features of the current stable version, we are working on a number of further improvements.<sup>4</sup>

### 2.1 Social Search

The functionality described in section 1.1 allows Wiki users to collaboratively work on describing their *information needs*. Additionally, we want to give Wiki users the possibility to collaboratively re-rank, add, delete and comment *search results*. Similar functionality has previously been presented by Wikia Search and Google<sup>5</sup>. However, both services have been discontinued resp. underwent significant modifications and were not yet subject to scientific analysis.

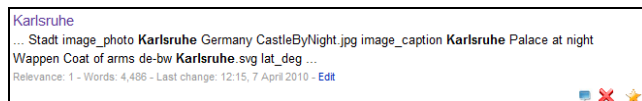


Figure 3: UI for re-ranking, deleting and commenting results

Thus, we would like to experiment with different design choices (e.g. if result list modifications are applied individually or for all users) and especially analyze how such social search features are adopted in smaller communities and enterprise settings. Currently, we have a working implementation of the core user interface (c.f. Figure 3) which is even shipped with the current Woogle release. However, this feature is still disabled by default since it lacks a comprehensive backend implementation.

We are also considering to enrich the Woogle UI with more personalized information about searches – e.g. adding user names when displaying search statistics. While many users expressed their interest for information on other users’ searches in our interviews, they also raised privacy concerns about revealing own search behavior (see e.g. also [1]).

### 2.2 Knowledge Sharing

Besides “red links” and search queries we want to give Wiki users additional, more explicit means to express information needs. This could include a function that can be used to “request” improvements or extensions to existing page content. Such requests could be automatically routed to potential contributors, alerting them about the information need. These improvements

<sup>4</sup> <http://www.teamweaver.org/wiki/index.php/Woogle4MediaWiki/Roadmap>

<sup>5</sup> <http://www.google.com/support/websearch/bin/answer.py?hl=en&answer=115764>

will also consider motivational aspects of Wiki usage [4] in more detail.

We also observed in our studies that “red links” and Woogle pages are often used to create simple “redirects” to existing Wiki pages. We are thus working on improvements to the Woogle user interfaces to better assist users with this task – e.g. by providing a kind of “1-Click-Redirect” button.

## 2.3 Social Semantic Search

An increasing number of MediaWiki sites employs the Semantic MediaWiki<sup>6</sup> [6] extension to capture and maintain more structured information. While there are initial approaches to assist users in searching semantic Wikis [2], we are currently investigating ideas about combining Woogle’s full-text search and querying semantic Wiki data.

## 3. SUMMARY

We think that our demo challenges and extends Wiki users’ perception about the role of information seeking and contribution in Wikis. Woogle4MediaWiki was designed for practical use and is available for download<sup>7</sup> as an Open Source extension.

We look forward the suggestions and criticism of the community to guide the further evolution of the software. While it was initially designed for usage in smaller community and enterprise Wikis, we also like to discuss how selected features could probably be helpful for the Wikipedia as well.

## 4. ACKNOWLEDGEMENT

This work is partially supported by the GlobalISE project, which is funded by the Landesstiftung Baden-Württemberg foundation.

## 5. REFERENCES

- [1] Burghardt, T., Buchmann, E., Böhm, K., and Clifton, C.: Collaborative Search and User Privacy: How Can They Be Reconciled? In Proceedings of the 4th International Conference on Collaborative Computing (CollaborateCom), Orlando, 2008.
- [2] Haase, P., Herzig, D., Musen, M.A., and Tran, T.: Semantic Wiki Search. In Proceedings of the 6th European Semantic Web Conference (ESWC 2009): pp. 445-460.
- [3] Happel, H.-J.: Social Search and Need-driven Knowledge Sharing in Wikis with Woogle. In: Proceedings of the International Symposium on Wikis and Open Collaboration (WikiSym’09)
- [4] Happel, H.-J. and Mazarakis, A.: Considering Information Providers in Social Search. In: Proceedings of the 2nd Workshop on Collaborative Information Seeking (CIR 2010)
- [5] Happel, H.-J.: Woogle – On Why and How to Marry Wikis with Enterprise Search. In Proceedings of the 2nd Workshop on Integrated Knowledge Management Systems (IKMS2009)
- [6] Krötzsch M., Vrandečić, D., Völkel, M., Haller, H. and Studer, R.: Semantic Wikipedia. Journal of Web Semantics, 5, p 251-261, September, 2007

<sup>6</sup> <http://www.semantic-mediawiki.org>

<sup>7</sup> <http://www.mediawiki.org/wiki/Extension:Woogle4MediaWiki>