

# PEWEPROXY: A PLATFORM FOR UBIQUITOUS WEB ADAPTATION AND USER MODELING

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**Abstract.** In this paper, we present PeWeProxy, a specialized proxy server which shifts personalization layer from the server side towards client and changes any web site of the “wild” Web into a personalized and social one. Such a platform is highly valued by both users and researchers. Users see the benefits of enhanced web surfing while researchers are provided not only with precious web usage data but also by means how to quickly evaluate their methods in real world scenarios.

## 1. Motivation

Most of nowadays Web adaptation methods are able to work only

- in specially tailored web-based systems with a well-defined and known domain (thus closed information space)
- require special devices on the user side, such as custom web browser
- force user to radically change her surfing habits (e.g., use a different search engine, which can significantly affect the evaluation of proposed methods).

Problem of closed information space is that information provided by one site (even in a personalized way) can hardly compete with the vast information potential of the whole Web. Even if this problem can be partially solved by techniques of open corpus user modeling, the two remaining problems (custom web client, custom search engine) still represent a barrier in transferring methods and results of research into practice, to a wider audience.

## 2. PeWeProxy personalized service

We present PeWeProxy, a solution to overcome aforementioned problems. It is an enhanced proxy server able to deliver ubiquitous personalized Web experience to its users. It comes with a service layer which allows for any possible processing of HTTP requests and responses flowing through the proxy, including an on-the-fly creation of lightweight keyword-based user model. Its main goal is to take personalization and adaptation techniques based on ideas of the Social Web and apply them on the “wild” Web of websites, which are created using “one-size-fits-all” paradigm.

PeWeProxy brings advantage to both users and researchers: users get the browsing enhancement that make the Web social and easy to use, while the researchers can collect precious data on the Web usage and perform experiments in real-life scenarios.

PeWeProxy is based on a fast and reliable proxy server Rabbit written in JAVA. We added an infrastructure, for capturing, processing and altering requests flowing from users to web servers and vice versa. The whole architecture is pluggable, where all the processing is done via plugins performing operations on the top of HTTP messages, making it extremely easy to incorporate new functionality. Although there were previous attempts to realize adaptive layer within a proxy server, such as IBM WBI, they lack high level infrastructure required for consistent user modeling (e.g., user identification, feedback collection).

## 3. PeWeProxy applications

PeWeProxy supports two types of web surfing enhancements: (i) site-specific enhancements, augmenting navigation or functionality of a particular web site and (ii) social-based enhancements, which can be applied to any web-site as they are based on generic principles of wisdom of crowds, such as visualization of footprints of visitors, which are similar to current user.

Our specialized proxy server provides pluggable and distributed architecture acting upon the communication between user's browser and the Web. It has a great potential for researchers in the field of user modeling and personalized systems, allowing them to quickly deploy and evaluate their ideas in cooperation with real users in real-life scenarios.

It is simple to build a plugin, which was confirmed by participants of PeWe workshop who created interesting web enhancements in just four hours, without any prior experience with our proxy platform. Because PeWeProxy also automatically synchronizes its database and user models between multiple instances and can be easily deployed in multiple geographical locations, we believe that more research groups from user modeling community would join our initiative.

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## References

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