

WEBROGUE: MEET WEB PEOPLE

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ABSTRACT

WebRogue is an application for virtual presence over the Web. It is implemented by coupling a Web client and a Chat client, so that each time the user downloads a Web page he or she can see who is connected to that site and chat with them. Users can decide to talk in couples, or simply speak loud, so that anyone that is watching that page can listen, or even scream so that everybody on the web-site can listen. Additionally two or more users can decide to form a group and surf together, one of them being the leader, that the others will follow. Whenever the leader changes URL, the page loaded on the browsers of anybody else in the group will change accordingly. The goal of WebRogue is to enable the birth of online communities around web-sites of interest, allowing exchange of opinions, in a free, non moderated manner, between site visitors and site owners, and thus it is designed with freedom of speech in mind. Nobody can moderate a WebRogue channel, no subscription or authentication is required, and the service doesn't rely on any particular application to be installed server-side in web-sites, for them to become meeting points for WebRogue users.

KEYWORDS

Web; Chat; Virtual Presence; Virtual Communities.

• INTRODUCTION

Information and Communication Technology, along 30 years of activity, has produced many tools to help people meet and share information. The Web, short after its creation, has evolved to a virtual space, where users find news and information. The word web-site should suggest a parallel with physical space, but as far as the user is concerned, a web site is a desert. He or She is alone there.

Many web-sites try to correct this providing information on how many users are connected, and tools, like messaging or mailing lists, to help them meet, but this is still a tricky mechanism, usually requires registration, and tends to form closed, micro-communities around specific web-sites.

Chat and instant messaging are another application that allow people communicate, but users are supposed to know each other or to connect to a specific service in order to meet.

Web-rogue fills the gap by coupling a Web client and a Chat client: each time the user downloads a Web page he or she can see who is connected to that site, and chat. Users can decide to talk in couples, or simply speak loud, so that anyone that is watching that page can listen, or even scream so that everybody on the web-site can listen. If a user needs to talk with someone (for example to the librarian in a virtual library) that is currently engaged in another conversation or away from the keyboard, he or she can enter a queue and wait for his turn, as in the real world. Additionally two or more users can decide to form a group and surf together, one of them being the leader, that the others will follow. Whenever the leader changes URL, the page loaded on the browsers of anybody else in the group will change accordingly. This allows Web surfers to

spontaneously aggregate around sites of interest, as it happens in the real world, without being limited or controlled in any way by web-site owners.

For example people interested in the research activity of CRS4 will simply connect to its Web-site using their favourite, WebRogue-enabled, Web browser. Without any subscription or registration, they will find online not only other rogues interested in the same topics, but, very likely, also employees and researchers of our group, as they would if physically coming at ours. At the same time we are not the least interested in keeping our visitors from criticize our work, openly compare it to others' or to their own, or even leave us and surf together towards 'competitors' sites. At the opposite, we developed WebRogue just to enable and encourage this kind of interaction between our visitors and ourselves, as we firmly believe in the potentials of such exchanges, when freedom of speech and communication is granted.

• ARCHITECTURE

Web-Sites and Web-People. The goal of WebRogue is to enable the birth of online communities around web-sites of interest, allowing seamless exchange of opinions, in a free, non moderated manner, between site visitors and site owners. So we put emphasis on two points:

- **Freedom of speech:** meeting people and discussing on a Web site must *always* be possible to anyone. This means in first place that the availability of the service must not be based on any particular tool installed at the Web server side, but also that site owner can't decide whether or not to provide this service, just like a book-store owner can't prevent customers from talking about books (or anything else) before the store.
- **Ease of use:** WebRogue is an extension of the Web, and as such it must rely on the applications commonly used to access the Web, i.e. the Web browsers. Any solution requiring users to adopt a tool other than their favourite one would be doomed to failure.

WebRogue is implemented as a client server application: an add-in for the Web-browser (a Mozilla implementation is available) stays on the client side and provides a chat bar and contact list; a server application (centralized and independent from specific web-servers) collects and delivers messages to the clients. It is important to underline that the server application is not related in any way to the specific web-servers. It is run by a server at CRS4, thus web-site owners have absolutely no control on who uses WebRogue on their page, and what can be said. No moderation or censorship is possible, no one can be denied access or granted a privileged podium. Everyone is allowed to say everything he or she thinks on whatever subject, to anyone.

Neighbors. One of the first problems we encountered while designing WebRogue was what to do when the user enters a site to which thousands of people are connected. Being able to chat to so many people could be amazing, but is clearly not practical given that what people say can be heard by anyone on the site; but let us think in terms of real world: what happens when people go to crowded places? There will be noise, communication will be difficult, meeting a specific person will be quite impossible. However people usually don't interact with everybody, specially, for obvious reasons, in crowded places. Conversation will be limited to people that are physically close. Within a web-site, euclidean distance is not a limit (and hardly has a sense) but we can still measure the *distance* between users, and find a limited number of neighbors. The actual metric can take into account the language, user profile (age, gender, ...) if available, the time (people that entered the site simultaneously are *closer* than others), web-page (people watching the same page of a large web-site can be thought of as if staying in the same room within a large building), geographical position. It can be any combination of these and other factors, and the choice is left to the users, or it can be left to fate and be simply random.

Communication Commands: Say, Whisper and Scream. The first goal of WebRogue is to allow people to chat freely on a web-site, there are three ways to do this. If the user *says* something, his or her words are heard by all neighbors. This is how we attract the attention of people in order to ask general questions, make comments, or simply say hello! If the user wants to talk to a specific person it is possible to *whisper* a message that will be heard only by the recipient, like in instant messaging applications. Finally,

users can *scream* their messages, if they want to be heard by anyone on the site and not only by their neighbors.

It is important to note that different people and cultures have a different perception of how invasive can be addressing comments or asking questions to others they're not acquainted with. Even more, screaming is generally considered a bad behaviour. But we designed WebRogue with freedom in mind: users can at any time decide to ignore or run away boring people, but nobody can deny to others the right to speak.

Social Commands: Handshake, Follow, Wait

Every community has its rules and protocols that govern interaction. WebRogue supports this allowing users to *handshake*, form *groups* and *wait* in line.

Like instant messaging applications, WebRogue can keep a list of contacts that will be recognized across different sessions, with several benefits. Contacts can be found when they are online, regardless of the site they are connected to, thus granting a preferred channel for communication, or in other words providing a virtual site, where contacts can be always found.

The Web in many cases can be a dis-aggregating experience. Even if it is not uncommon to have more than one user sitting at the same desk surfing the Web, the common scenario is that of a single user. Applications exist that allow surfing in couples or in groups at different workstations, but with the already mentioned limitations. WebRogue allow to surf in groups with people never met before: for example in a guided tour of a virtual museum, or simply for fun.

Furthermore in many circumstances it is necessary to wait in line to talk to a specific person, as in real life people wait for their turn in order to get services. WebRogue provides a support for this.

- **RELATED WORK**

WebRogue puts together well tested tools and ideas that, so far, found application in different, separated software. Communication commands are typical of chat and instant messaging applications, social commands are mutated from role-playing games, extensions of this metaphors to the Web have been implemented as server side applications. WebRogue brings the implementation closer to the client to allow a community to spread over different sites, or over the entire Web, and to avoid the possibility of control and censorship. Group web-surfing (by means of the *follow* command) has many similarities with tools for collaborative workgroup, that found application and are a research subject in several fields, from e-learning to software engineering. Particularly interesting is the analogy to the research in the field of location-based Web-services, that try to adapt Web-service behaviour to the geographical position of the users. Using the geographical position in the computation of the neighborhood of users, could be very interesting in tourism applications.

- **PRIVACY AND SECURITY ISSUES**

User Authentication and Message Encryption. In real life people are not required to authenticate themselves while entering a public place, such as a store or a school, but at the same time personal identification is performed informally: i.e. people get recognized by their face or voice. Only when real security reasons exist people accept to identify themselves, by means of personal ids, as when money transactions occur or officers require it. As said WebRogue is designed with freedom in mind and the users are generally considered to be anonymous. Personal identification is never required but users may want to be recognized, for example as affectionate customers in a virtual store or by their contacts. In these cases personal certificate authentication is supported by WebRogue. Double key cryptography is also supported for private communication (by means of the *whisper* command).

Rethinking Web-Surfing. WebRogue suggests a different point of view on the concept of web-site. Web-sites are, not always and not only, but often, a self celebrating advertisement for organizations and firms. On

the Web everyone is leader in its own field. Furthermore, even if the Web is claimed to be an interactive medium, interaction usually is limited to filling an HTML form with (fake) personal data to get access to a Web service. Users are just passive spectators of Web-pages that in some way are becoming quite similar to TV channels or newspapers. In our view WebRogue empowers the *upload* channel, granting users the right to get their own voice heard.

• CONCLUSION

WebRogue lets web users meet in web-sites, as people meet in physical places, freely interacting by means of communication and social commands, without any control or censorship by web-site owners. It is designed with the spirit of free and spontaneous association in mind, to encourage users to share information and opinions. Unlike chat or IM software users are not supposed to subscribe any service or to authenticate, and there is no need to contact a dedicated service to open a channel for discussion. As users with similar interests are likely to consult the same web-sites, the web-site itself becomes a meeting point for them.

We developed WebRogue as a communication channel between CRS4 researchers and online visitors, but plenty of applications can be imagined, from e-commerce, to e-learning, to online entertainment. Here are three sample applications:

Virtual Shopping. When connecting to an e-commerce web-site with Web-rogue, the User can see who's there. As if entering a physical store, a clerk, will welcome he or she, offer help and eventually guide the user through shelves and merchandise. The user can ask questions, discuss the price, even ask opinions and suggestions to other customers.

Virtual Tour of a Museum. Loading the home page of a museum into Web-rogue the user can find online a guide and a group of people that is about to start a guided tour. He or she can decide to join them and follow the guide through the various rooms, listen to explanations, ask questions.

e-Learning. Almost every school or University offers a web-site to students that provides information and services, like lesson timetables, contacts and homepages of professors, library catalogue etc. With Web-rogue students could find their tutor online that will point (or even accompany) them to the correct pages, answer frequently asked questions, accept suggestions etc.

WebRogue is an early work in progress, a pre-release for Mozilla exists but further development is needed to completely support the functionalities described. Porting to MS internet Explorer and Firefox are planned as a next step. To grant freedom a peer to peer communication layer would be preferable to a client server architecture. The communication protocol is proprietary and based on RDF for ease of implementation, an open, standard protocol like Jabber would better suite our idea of free software. WebRogue is an open source software, to get more information, download the latest build, or participate in its development contact the authors or see <http://www.crs4.it:8000/webrogue>.

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GPSWeb, DJ-lab, XPSuite, qualche link su chat e Ims. E poi boh

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