A new system preserves the right to privacy in Internet searches

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A new system preserves the right to privacy in Internet searches. Credit: Jeffrey Beall/Fausto Fernós/ SINC

A team of Catalan researchers has developed a protocol to distort the user profile generated by Internet search engines, in such a way that they cannot save the searches undertaken by Internet users and thus preserve their privacy. The study has been published in the *Computer Communications* magazine.

Just imagine someone from Company X who uses the Google search engine to obtain information about a certain technology. If Company Y, a competitor of X, should discover this situation, it could infer that the abovementioned technology is going to be used in X's new products, and with that information it could obtain a competitive edge. In the same

way, a mass media enterprise that finds out the searches undertaken by the competition's journalists could infer what news items they are working on and beat them to it. A personal report could also be drawn up on someone based on their searches.

In order to solve these types of situations, a team of researchers from three Catalan universities (the Rovira i Virgili University, the Autónoma of Barcelona and the Oberta of Catalonia) has developed a system which preserves user privacy via a new computer protocol, whose details are published in the Computer Communications magazine.

"It is a model based on cryptographic tools which distort the profile of users when they use search engines on Internet", explains Alexandre Viejo to SINC. He is one of the authors of the study and a researcher at the Computer Engineering Department of the Rovira i Virgili University, "in such a way that their privacy is preserved".

Search engines such as Google, Yahoo and Microsoft Live search save the profiles of their users (via an analysis of the searches they undertake) with the argument that they are more familiar with their interests and offer a more efficient response.

There currently exist types of software which provide anonymous navigation, such as the Tor network, but the new system "offers a clear improvement in response time". Nevertheless, Alexandre Viejo acknowledges that the application of the protocol delays searches slightly, "but it can be perfectly assumed by the user".

The tool prototype has already been tried in closed (research centre intranets) and open (internet) environments, "and the results allow us to be optimistic with the global implementation of the model". The researchers are now working on the development of a final user version and trust that it will soon be easily integrated into the main platforms and

browsers.

More information: Jordi Castellà-Roca, Alexandre Viejo, Jordi Herrera-Joancomartí. "Preserving user's privacy in web search engines". *Computer Communications* 32 (13-14): 1541, 2009.

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