

Online Presence in Social Networks

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Introduction

Social Networks (SN) emerged as a form of online communities during the outbreak of Social Web. Their purposes vary from maintaining professional contacts to having fun with friends, and their user-base continues to increase. The use of a SN represents a form of being present online (on an online service) and naturally incites users to leave some traces about the nature of their online presence.

In this paper we talk about all that data describing a user's presence in the online world, gathered under the notion of Online Presence, and identify the perspectives for future work in this field.

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Apart from direct interactions with their friends on SNs, users tend to describe their current state of mind, activities, etc. by using different mechanisms available on SNs, e.g., custom messages, busy/available statuses, avatas etc. By assembling all that data, user's friends can form an overall image of his/her presence in the online world and sometimes get even a clue of his/her situation in the real world. This overall image can be even enriched with some other expressive forms provided by different SN applications allowing to state for example: "feeling good" or "listening Madonna – Like a Virgin".

Specifying all that data and thus describing the nature of their presence in the online world allows users to maintain some form of passive interaction with their peers. In the time of spatial distances, general business, work and information overload, and consequentially a changed attention paradigm – reduced to shorter time periods, having this sort of passive interactions with friends for whom we wouldn't always find time for a direct call, chat or e-mail allows users to keep in touch and maintain some form of bond. Furthermore having the nature of presence described, with some elements of current situation in the real world could provoke more dedicated interaction in more appropriate times (e.g., a call as a response to a certain custom message).

The usefulness of maintaining Online Presence related data in user profiles is fortunately complemented by the numerous services on the Web that allow one to create and share descriptions of some presence aspects. Many of them are also accessible from mobile devices making the activity of keeping those descriptions up to date very easy.

The fact that the data that forms the image of a user's presence in the online word is spread over different services imposes the question of interoperability and data integration. In order to meet this challenge we have started to work on the Online Presence Ontology, described in [1]. In the next subsection we briefly present just the core of the ontology design.

The Online Presence Ontology

The aim of the Online Presence Ontology (OPO) is to enable integration and exchange of Online Presence related data. This data can be seen in a way as dynamic part of user profiles in online services, as opposed to static parts, already well supported by the FOAF ontology [2].

`OnlinePresence`, the core class in OPO, represents a placeholder for all the aspects of a user's presence in the online world. Quite naturally it is connected to concepts of other main-stream ontologies by appropriate object properties (Fig. 1). Those connections allow for correlating the `OnlinePresence` with the profile of a user declaring presence (Foaf), the current geographical location of the user (wgs84 vocabulary¹), etc. Representing custom message in the form of a `sioc:Item` from the SIOC ontology[3] makes OPO statements applicable in the domain of lifestreaming where commenting and replying to custom messages is a common practice.

The complex presence dimensions representing mostly attitudes (e.g., the attitude towards being contacted is represented by Instant Messaging status) are modeled through a structure of `OnlinePresenceComponents` allowing the introduction of new presence dimensions in the future. The detailed description of the components structure as well as numerous examples of statements in OPO can be found on the project website².

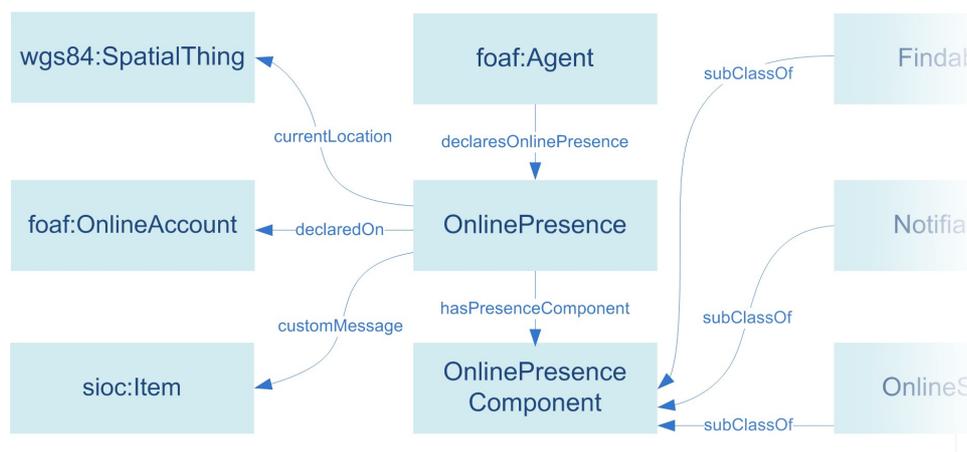


Fig. 1 Partial View of the Online Presence Ontology

The development of the OPO is an open process. The current development version is displayed on the project website and everyone from the community is welcome to submit comments and suggestions through a public discussion group. It is the intention of this project to deliver a highly usable semantic representation applicable for as many purposes as possible.

Activities and Presence Context

It is not uncommon for users of Instant Messaging programs to share the name of the music track they are currently listening. In the OPO such a form of communicating the details of an action currently performed by a user is supported in the form of `opo:Actions` (Fig.2).

¹ <http://www.w3.org/2003/01/geo/>

² <http://www.milanstankovic.org/opo/>

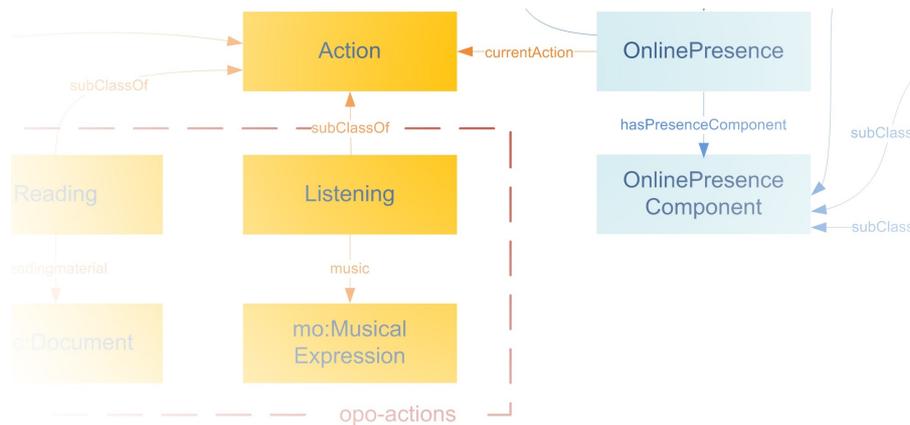


Fig. 2 Actions in OPO

Apart from giving a precise and detailed description of a user's current action, usable by different applications, those Actions describe relevant aspects of the user's real world context which significantly influences (the interpretation of) his/her presence online. As such, they can represent the ground for introducing more complex rules and policies enabling to adjust the behavior of systems and services to the nature of the user's presence. For instance, a policy (implemented through a set of rules) could define that a user with the current activity set to 'Working on a Project' could be contacted only by persons working on the same project. Rules and policies could also provide a mechanism for users to specify different online appearances for different categories of users (again context elements could play a role in defining those categories).

In the SN domain, a variety of user's expressions (e.g., "feeling great", "watched a movie: Quantum of Solace", etc.) obtained through different purpose SN applications could represent a significant source of contextual data that could become increasingly relevant in the future development of OPO.

Perspectives

We argue that maintaining and improving a vocabulary such as OPO is of great importance for the data integration and interoperability in SN domain. Exploring the potential of context elements representation is, in our opinion, one of the directions of future work that could enable significant new functionalities to users.

Finding the appropriate rules or policies mechanism to enforce the application of attitudes contained in described presence and adapt the behavior of applications to those attitudes is also of great importance.

References

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