

Proposing an Ontological Cognitive User Model for the Adaptation of Generic Web Environments

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Adaptation and Personalization systems can benefit with the incorporation of ontological knowledge, especially when it comes to modeling the user. In this paper we present a cognitive approach to Web Personalization based on an ontology that contains users' cognitive factors. Given the significance of human factors in Web structures' transformations, we propose an Ontological Web Personalization and Adaptation Mechanism based on users' cognitive parameters. This mechanism consists of a number of interrelated components; modeling users based on their cognitive parameters and providing content adaptation based on semantics. An RDFa schema has been designed that enables standard annotations in any XHTML Web-page, thus making structured data available for the adaptation process, but also for any service or tool that supports the same standard. Our work has been positively evaluated using an existing commercial Web-site that was filtered through the adaptation mechanism based on users' cognitive parameters. The expected impact of the content reconstruction lies in the increase of users' satisfaction and efficiency of information processing (both in terms of accuracy and task completion time), while users navigating in the personalized condition rather than the original one.