

Information Recommendation with Use of Context in a Specific Domain

Anton BENČIČ*

Slovak University of Technology
Faculty of Informatics and Information Technologies
Ilkovičova 3, 842 16 Bratislava, Slovakia
bencican@live.com

Our every action, wish or preference is shaped by our context, be it short-term or long-term. Studies about mobile devices, which have long passed on being just mobile phones, show that people use them and the connected services they offer even when they are in a presence of a computer [1]. Besides the basic information or context like location, orientation, browsing history or installed applications that can tell a lot about the user, we can access the user's data from social networks like Facebook or Twitter to get even more of the context.

The vast amount of information about user's environment and current whereabouts provide foundation for a number of applications that make use of it. The problem however with most of them is that they only choose a small subset of this context and act upon it. This subset includes most often only the location of the user, which while being useful in certain scenarios, cannot fill up for the whole picture and for example a pattern matching is often infeasible or annoying for the user when put in practice because of its inaccuracy [2]. Few methods [2, 3] today are attempting to gather context information from multiple sources such as mobile context, social context and smart space sensor context, and combine them together. By leveraging more than a location or a time by itself, these contexts are much more capable of recognizing patterns in the user's behaviour [2].

In addition to combining context from multiple sources to get a better picture of the user's current situation, selection of relevant context information is also important, because using (regardless of current situation) every piece of the context information introduces the same problems. The context-aware recommenders must strive to make use of the entire relevant pieces of the context information in order to perform effectively and efficiently. On the other hand, choosing the relevant context is not a straightforward problem as it varies among users, making room for group formation and collaborative methods.

* Supervisor: Mária Bieliková, Institute of Informatics and Software Engineering

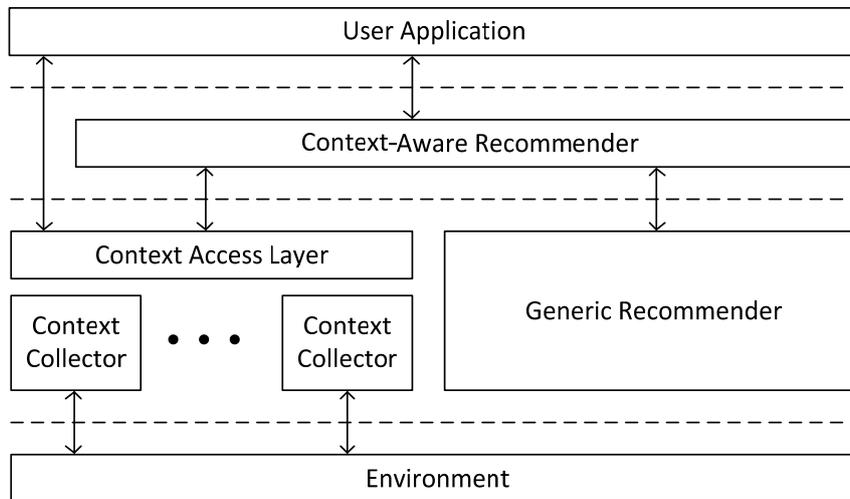


Figure 1. Context Fusion and Context-Aware Recommendation.

Our aim is to create a context framework that will provide applications with access to user's context through a unified and transparent interface, allowing the applications to choose the recommendation method as well as the context subset they want to use. The overall architecture is shown in Figure 1 where the aforementioned context framework consists of an extensible set of raw context collectors, context access layer and a context-aware recommender.

With the context framework at hand we will perform a number of experiments with one or more specific domains, like an internet newspaper or a digital library in order to see what context subsets are relevant in those particular domains and with what combination of recommendation methods we can achieve the best results.

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