Analysis and Measurement of User Behaviour in a Web Application

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In concrete situations, the behavior of people is quite similar [1]. The context, which is very important, is composed from different characteristics of the being and the environment. The being behavior is based on this context. If we focus only on some aspects of people's behavior, we can split people into groups, in which we are able to predict user's behavior and user's next steps.

In this thesis we discuss behavior of people in web application and also the most important metrics and characteristics of the behavior. We discuss possibilities in measurement of user behavior in web application, the best metrics and their information value. We put to use advanced artificial intelligence algorithms.

In former work there are discussed patterns in sequence of visited pages [2]. We think than in current situation, with better data and algorithms, we can find much more than that.

User behavior in application is measured by scripts. We measured visited pages, time spent on page, interest in products, exit page, hour of the day, channel by which visitor came to our application and lots of other metrics about every visit. The application is bank information site and internet banking. We measured behavior of ~250 000 people.

These data are then joined with data from internal database, which contains age and sex of the registered visitor. This approach can make final model more precise [3]. After cleaning and depth understanding statistics about data, we proposed to use singular value decomposition (SVD) for finding the correlation between metrics and their information value.

After cleaning and reducing amount of data through SVD, we try to use support vector machines (SVM) to cluster data. After clustering and finding the best amount of clusters, we want to build model through association rules.

The goal is to predict user's behavior. First step to this is to find what the common use of the application is. Then we can explore behavior of the users, which use our application often. Finally, we want to be able predict characteristics of new user and his behavior in application in future.

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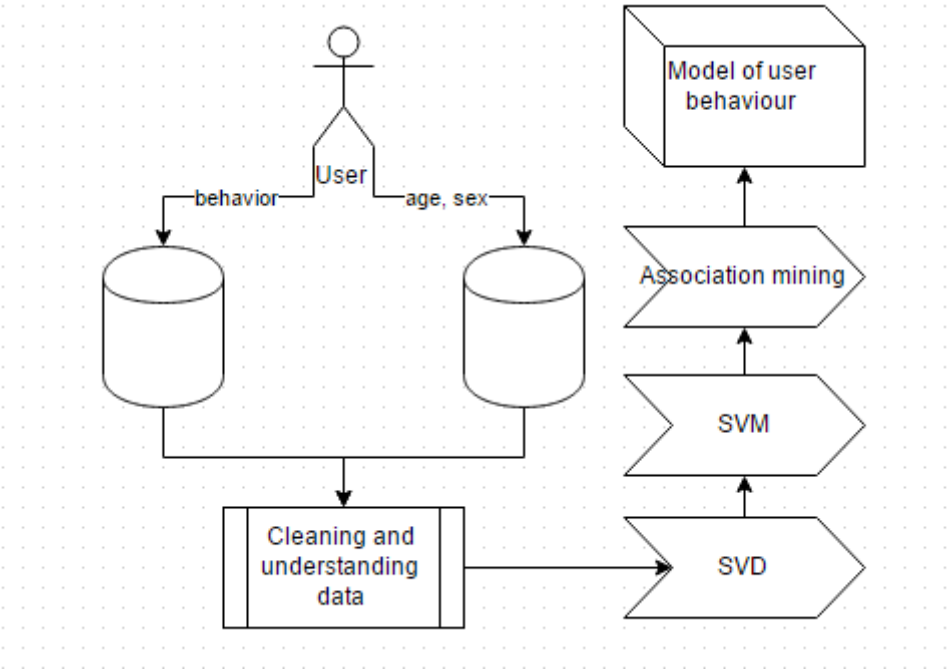

Figure 1. Process of building model of user behaviour.

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References

[1] P. D'Urso, R Massari: Fuzzy Clustering of Human Activity Patterns,. In: An International Journal in Information Science and Engineering, 2012.

[2] K. Sudheer Reddy, G. Partha Saradhi Varma, and M. Kantha Reddy: Discovering web usage patterns by using an innovative practical approach. In: SIGSOFT Softw. Eng. Notes 37, 3. May 2012, 1-4.

[3] S. Goel, J. Hofman, M. I. Sirer: Who Does What on the Web, A Large-scale Study of Browsing Behavior. In: Sixth International AAAI Conference on Weblogs and Social Media, 2012.