



Master's Thesis proposal

General Information

Master's Thesis Title: **Content-based Recommendation in a social network of users**

Orientation: professional
 research

M.Sc. Th. Advisor's Dept. & University: MAIA,UB

M.Sc. Th. Advisor: Maria Salamó

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Observations: The master thesis is partially involved in a project

Student's Name: Narcís Margall
(if already known)

M.Sc. Thesis Description

Main issues / Brief Description:

The project goal is the study and development of specific techniques for making recommendations in a social network.

Detailed Description:

Recommender systems try to help users access complex information spaces. A good example is when they are used to help users to access online product catalogs, where recommender systems have proven to be especially useful for making product suggestions in response to evolving user needs and preferences. In this project, we will investigate different scenarios of recommendation to users connected in a social network.

The thesis work will involve:

- Study of recommender systems [1, 2, 3] although the proposed techniques will be focused on case-based recommendation [4] and on hybrid recommendations [5].
- Modelling user preferences.
- Recommendation based on preferences of users and their navigation in the social network [6, 7].
- Development of the proposals into a social network of users.
- Generalisation to different domains.
- Evaluation and result analysis of the proposals.

[1] Pazzani, M.J., Billsus, D.: Content-Based Recommendation Systems. In: Brusilovsky, P., Kobsa, A., Nejdl, W. (eds.) *The Adaptive Web: Methods and Strategies of Web Personalization*. LNCS, vol. 4321, pp. 325–341. Springer, Heidelberg (2007)

[2] Schafer, J.B., Frankowski, D., Herlocker, J., Sen, S.: Collaborative Filtering Recommender Systems. In: Brusilovsky, P., Kobsa, A., Nejdl, W. (eds.) *The Adaptive Web: Methods and Strategies of Web Personalization*. LNCS, vol. 4321, pp. 291–324. Springer, Heidelberg (2007).

[3] Smyth, B. (2007) 'Case-Based Recommendation' Eds. Brusilovsky, P., Kobsa, A., Neidl, W. *The Adaptive Web: Methods and Strategies of Web Personalization*. Lecture Notes in Computer Science, Vol. 4321. Springer-Verlag, Berlin Heidelberg New York.

[4] Bridge, D., Göker, M. H., McGinty, L., and Smyth, B. (2005). Case-based recommender systems. *Knowledge Engineering Review* 20, 3 (pp. 315-320).

[5] Burke, R. (2002) . *Hybrid Recommender Systems: Survey and Experiments*. In *User Modeling and User-Adapted Interaction*, vol. 12, number 4, (pp. 331-379). Kluwer Academic Publishers.

[6] Salamó, M., Reilly, J., McGinty, L., & Smyth, B. (2005). Knowledge discovery from user preferences in conversational recommendation. In *Knowledge Discovery in Databases: 9th European Conference on Principles and Practice of Knowledge Discovery in Databases*, (pp. 228–239). Springer

[7] Salamó, M., Reilly, J., McGinty, L., & Smyth, B. (2005). Improving incremental critiquing. In *16th Artificial Intelligence and Cognitive Science*, (pp. 379–388).

Other comments:

We recommend applicants to have minimal knowledge of machine learning and data mining although it is not a sine qua non condition.

Barcelona, October 18th 2010