Research Paper Summaries

Elmer Diaz

May 8, 2015

1   First Summary (Fab and How it Works)

"Readers need assistance in making selections." This line stands out immediately as I read the introductory paragraph of Fab: Content-Based, Collaborative Recommendation. The truth is that we do need assistance. Most of the time, I find myself being indecisive because I am not sure what would be worth my time. I need help deciding, and this is what Fab offers. Fab combines content-based and collaborative recommendation. Content-based means that one tries to recommend items similar to those a user has liked in the past. On the other hand, in collaborative recommendation, one finds users that have similar tastes to those of a given user. As a result, it recommends items the other users have liked.

Now, I will be moving on to how Fab functions by using a hybrid-system. First of all, in order to create, a hybrid-system of the two aforementioned systems, there is a need to maintain user profiles based on content analysis; the profiles are compared to obtain similar users. As a result, users obtain items when they score high against their own profile, and when they are rated highly by a user with a similar profile. The process of

recommendation is divided into two steps. First, there has to be a collection of items to create a database. After this, there is a selection of items from the database for distance users.

Reading about this reminds of how Google's search engine works. It is quite interesting to see the connection between these two seemingly disparate systems. From what I have read, Google uses an algorithm to find the best pages and it ranks them in order of what is most applicable to the particular search. In this way, both Fab and Google's search engine have collection and selection agents. Similarly, Google ranks pages by how much different users have used the page. This resembles the idea behind collaborative recommendation. It is interesting to see these to kind of connections. I would dare to say that Google is somewhat an evolution of Fab.

2   Second Summary (Fab Results and Performance)

The people involved with Fab tested their system in an intriguing manner. They asked 11 users to pick a topic of interest. Some of the topics included computer graphics, game programming, sport information. and Native American culture. They used the user's ratings to create a preference ranking.

Moreover, certain agents became experts on certain topics. As stated in the results, one of the agents became a cooking expert. Additionally, the system was successful in recognizing overlaps. For example, the system gave users appropriate pages about biodiversity in India, since the user was interested in evolution. This is quite powerful because the agents are creating intelligence of their own. They are adapting to the information that

is given to them. Lastly, the ultimate goal is to have a fixed pool of agents that will dictate how many users can be served.

As explained in the research paper, the web can be intimidating because the information it holds seems to be endless. Therefore, having personalized recommendations can have great value, since we want to have access to best information possible. The results demonstrate that Fab has great potential. The agents are working well, and they are specializing in different topics. Moving forward, the system hopes to make better use of the collaborative and content-based aspects.

Analyzing this paper, makes me think about how computers can adapt to certain behaviors. This is part of the essence of machine learning. The computer can find out that a certain user likes a certain topic by working with the preferences of a user. This is very similar to going to the same restaurant many times. Eventually, the waiters in the restaurant will know what you like, since you continue to give them your food preferences. The computer is an intricate machine. Learning, a human activity, can now be used by computes. Machine learning is definitely an emerging field, and I am excited for future advancements. There is always room for improvement, and this paper acknowledges this well. The people working with Fab know that this is just the beginning and many functions can be improved.