The Demonstration of the Reviewer’s Assistant

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ABSTRACT

User generated reviews are now a familiar and valuable part of most e-commerce sites since high quality reviews are known to influence purchasing decisions. In this demonstration we describe work on the Reviewer’s Assistant (RA), which is a recommendation system that is designed to help users to write better quality reviews. It does this by suggesting relevant topics that they may wish to discuss based on the product they are reviewing and the content of their review so far.

Categories and Subject Descriptors
H.3.3 [Information Storage and Retrieval]: Information Search and Retrieval

Keywords
product reviews, computer support, topic recommendation, recommendation systems

1. INTRODUCTION

It is increasingly important for sites like Amazon and TripAdvisor to help people find and create high-quality reviews since people are increasingly turning to user-generated reviews to support their decision-making. Amazon provides users with the opportunity to rate reviews based on their helpfulness and allows prospective customers to rank reviews by their helpfulness score.

In this demo we instead focus on the task of creating new reviews and specifically how recommendation techniques may support users as they write product reviews. This work is inspired by GhostWriter [1], which uses case-based reasoning techniques to make suggestions for the user at review-writing time. Briefly, GhostWriter maintains a case base of review experiences, made up of previously helpful reviews and indexed by the terms that occur in these reviews. As the user writes a new review, the text that they write serves as a query against this case base, GhostWriter retrieves a ranked set of similar review cases, and extracts a set of frequent noun phrases to recommend to the user. Dong et al. [2] adopt a similar approach but compare nouns vs. noun phrases in order to make better suggestions to the user.

In the following sections we describe our approach to view recommendation and how this has been incorporated into a browser plugin and illustrate how it works.

2. THE REVIEWER’S ASSISTANT

The Reviewer’s Assistant has been developed as a browser plugin so that it can integrate directly with review systems across a wide variety of web sites, see [2]. Briefly, the Reviewer’s Assistant takes the form of an additional recommendation module that appears on review-creation pages. These recommendations are review topics that have been extracted from a database of reviews (on Digital Cameras in this instance) and selected and ranked according to the content of the user’s review so far. At any time the user can even select a topic to see an expanded list of relevant review fragments which is a good aid for the review process.

The basic Reviewer’s Assistant system architecture has been described in detail elsewhere (see [2]). For the purpose of this demonstration it is sufficient to outline its four main components. The filtering module is responsible for extracting and indexing a suitable set of high quality reviews for a given product class. This can be as straightforward as using review quality indicators as a guide (e.g. on Amazon). When a user begins writing a new review, their early content is used as a query against these filtered reviews and the mapping component is responsible for identifying a set of k similar reviews (k = 50); currently, we use a simple Jaccard similarity metric. Next, from this set of relevant reviews the extraction component extract nouns, noun phrases, and ultimately topics from these reviews. The crucial step of identifying and ranking frequent sets of nouns is performed by association rule mining (see [2]).

In order to generate a rich set of suggestions we apply association rule mining both at the review level and at the sentence level to extract a set of association rules as the basis for recommendation. Briefly, our system takes, as input, the set of similar reviews and the current review text by the user and outputs a set of n (n = 10) suggestions. If association rules do not lead to a set of n recommended topics then further topics are extracted from reviews based on a simple frequency count as a fallback strategy. Thus as the user continues to type their review, extracted rules can be triggered leading to updated recommendations. Equally, as topics are covered by users in their writing, corresponding recommendations fall away.

In this demonstration we show a novel variation of the Reviewer’s Assistant with an extended core recommendation strategy. Instead of noun suggestions that are drawn directly from past reviews we are now presenting topic-based

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I bought a Nikon D90 a few months ago based on strong recommendations from my friends. This camera is the first DSLR I have owned. The included 18–200mm kit lens is very useful and versatile as an all-purpose lens. I love the quality of the pictures I take with this camera and it's extremely good at capturing images without a flash even in dim lighting conditions. I really like the magnesium body and the size is perfect, it really sits in the hand. The menus and controls are easy to use. You can start using the camera and save time by just browsing the quick start manual booklet. I am an amateur photographer and find it difficult to set up perfect aperture and shutter speed manually, the pre-defined modes are very useful and work well, such as sport mode. The battery life of this camera is truly outstanding. There is no need to buy a spare battery as you can take thousands of pictures on one charge. I have already used the video recorder several times, it is great for the short videos. It is sold at a good price and the shipping was quick.

Joe in this snapshot are highlighted by emphasising the respective topic terms in the sentences of the current writing, including lens, aperture, shutter, battery life, etc.

4. CONCLUSIONS

We have evidence that the Reviewer’s Assistant supports the writing of better quality and more comprehensive reviews, see [3]. This is of crucial importance for e-commerce sites such as Amazon, TripAdvisor, etc. User trial participants generally provide positive feedback about the quality of suggestions and their overall experience.

5. ACKNOWLEDGMENTS

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6. REFERENCES