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Anything Fun Going On?: A Simple Wizard to Avoid the Cold-Start Problem for Event Recommenders

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ABSTRACT

In this demo, we showcase a set up wizard designed to bypass the cold start problem that often affects recommendation systems in the event domain. We have developed a mobile application for tourists, RelEVENT, which allows them to quickly and non-intrusively set up preferences and/or interests related to events. This will directly affect the degree to which they can receive personalized recommendations on-the-fly and become aware of events happening around town that might be appealing to them.

CCS Concepts

•Information systems → Decision support systems; Recommender systems; *Personalization*;

Keywords

Recommendation system; cold start; events; wizard; mobile application

1. INTRODUCTION

Recommendation systems can help users in locating items (e.g., products and services) of interest more quickly by filtering and ranking them based on some criteria, i.e., location, popularity, or preference, to name a few [1]. No matter if it is related to shopping web-sites (Amazon, e-bay, cheapoair, etc.), news related web-sites (Yahoo, CNN, etc.), hotel search or restaurant search, recommendation systems have a huge influence on businesses success and users' satisfaction. Thanks to those systems, companies and products are able to get advertisement by being offered to potential buyers. At the same time, recommenders enhance users' experience by assisting them in finding information pertaining to their preferences.

Recommenders focusing on common products or services, such as books, movies, or restaurants, have been well-studied and developed. However, research efforts related to recommendations within the tourism domain are less prolific and must address novel challenges pertaining specifically to this

domain [3]. In fact, most existing works in this domain focus on suggesting specific places or events. Places are often associated with well-known geographical locations, i.e., Points-of-interest (PoI) [4], such as the Eiffel Tower or New York Yankees Stadium. Events, on the other hand, are usually short-lived and varied in nature. Within the tourism domain, events pose a special challenge for recommendation strategies given the lack of uniform event metadata and historical information in the form of personal ratings. Events are varied in nature, ranging from concerts and sports games to small gatherings or dinner parties and can occur in diverse locations that can often change and do not necessarily correspond to a PoI.

Regardless of the domain, cold start is one of the most "popular" challenges that hinders all recommendation systems. Cold start occur when the system is not able to create recommendations due to unavailable historical data for new users or items. This can be the reason why recommenders cannot be more successful in creating personalized suggestions and linking items to users. The cold start challenge is even harder to solve in the case of suggesting events. This is due to the fact that events have short time span and cannot be recommended after they end [2]. While this complicates the issue from an event perspective, we can address this problem by focusing on the users instead.

In this demo, we present wizard used by RelEVENT, the mobile recommendation application we developed, for bypassing the cold start problem in suggesting events at specific cities that people may find useful or interesting during their visit. The goal of this wizard is to collect enough data a-priori to provide personalized suggestions without imposing too much burden on the users. While the idea of a wizard is not unique to RelEVENT, to the best of our knowledge, our strategy is the first one that offers a balance of initial information to personalize suggestions and differs from strategies in the tourism domains, such as the one presented in [Bor15], which focus on type of traveler group, age, date, and motivation. We are aware that some users may prefer to bypass such a wizard, in which case the default options will still aid RelEVENT in providing suggestions tailored to proximity and popularity, i.e., provided suggestions will relate to the most popular events at that time in a given city.

2. OVERVIEW OF THE SYSTEM

RelEVENT includes the wizard made a specific set of questions that helps RelEVENT in filtering events for new users and avoiding the cold start problem and offer on-the-fly suggestions.

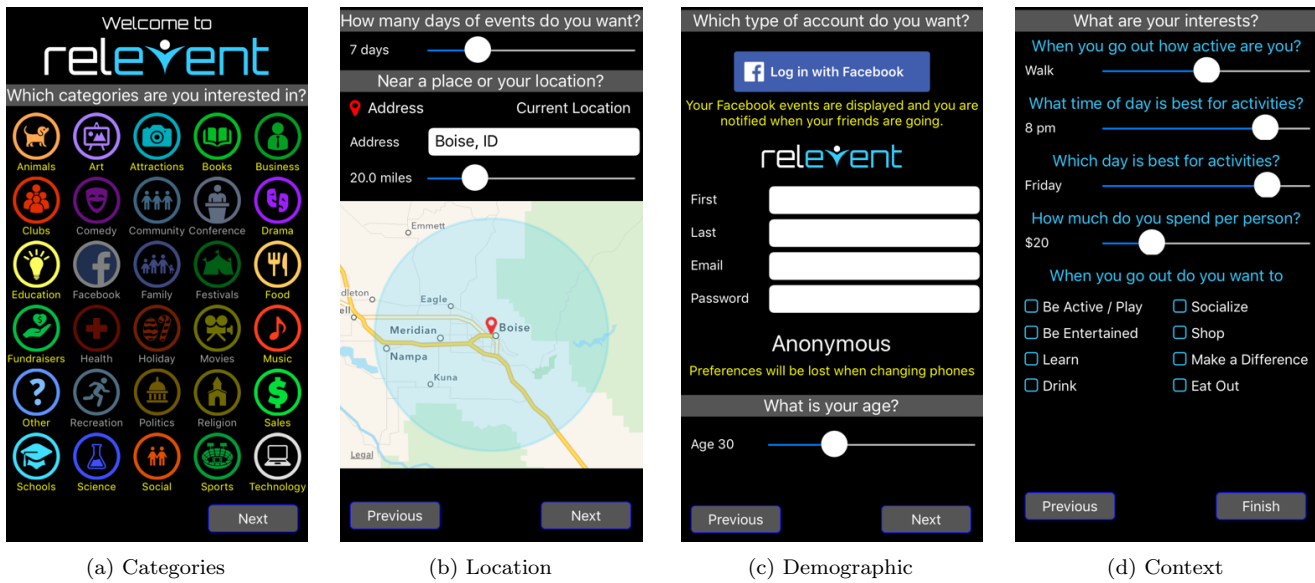


Figure 1: Snapshots of RELEVENT setup wizard

As shown in Figure 1(a), initially, our application will ask a user to select a number of well-known categories of interest. In addition, we included Facebook as a special category to allow users to include in their list of possible events to be recommended events that are publically available on Facebook. In doing so, our application can not only recommend the more “typical” events happening around a specific location, from conferences to movies to sales, but can also focus on more spontaneous and unique events, such a technical group meeting, e.g., ACM-W meeting at a university or a

Tourists can be visiting a location for a short period of time for an extended vacation. With that in mind (as illustrated in Figure 1(b)), by default, a user will receive recommendations occurring within seven days. However, if desired, they will have the opportunity to decrease or increase the range of dates from which recommendations will be generated. A key aspect of recommendations related to tourism is distance. Users may favour events within close proximity or may be willing and able to move farther around town. Our application uses by default a 20 miles radius to limit the locations where events to be suggested occur. This radius can be adjusted by each user based on their own preferences and needs.

Age (shown in Figure 1(c)) is another dimension considered by RELEVENT. While not novel, it is one of the simplest questions that will help the recommender engine eliminate from their set of candidate events to recommend those that do not target the demographic of the user. More importantly, it will help eliminate from the list of possible recommendations those pertaining to events that occur where minors cannot attend.

As shown in Figure 1(d), the most interactive set of questions appear at the end of the wizard. RELEVENT is interested in finding out, if possible, the context or type of activities a visitor has in mind. In doing so, the recommender the recommender engine will be able to further narrow down the options available for each user and thus further personalize the provided recommendations. While Level of activity and Overall intention of events will lead to suggestions that

match the physical abilities and expectations of each user, the time, date, and budget will ensure that suggested activities are appealing to each users.

3. CONCLUSION

In this demo we described the solution we implemented to deal with the cold start problem affecting event recommendation systems. To provide the most relevant suggestions to each user, we created a short wizard that will allow new users to off RELEVENT enough information about their interests and preferences to instantaneously receive appealing suggestions. Based on initial testing and feedback collected from users, we are encouraged with the performance and usability of wizard.

4. REFERENCES

- [1] F. Gedikli, D. Jannach, and M. Ge. How should i explain? a comparison of different explanation types for recommender systems. *International Journal of Human-Computer Studies*, 72(4):367–382, 2014.
- [2] H. Khrouf and R. Troncy. Hybrid event recommendation using linked data and user diversity. In *Proceedings of the 7th ACM conference on Recommender systems*, pages 185–192. ACM, 2013.
- [3] A. Moreno, L. Sebastián, and P. Vansteenwegen. Tours’15: Workshop on tourism recommender systems. In *Proceedings of the 9th ACM Conference on Recommender Systems*, pages 355–356. ACM, 2015.
- [4] Y.-T. Zheng, Z.-J. Zha, and T.-S. Chua. Mining travel patterns from geotagged photos. *ACM Transactions on Intelligent Systems and Technology (TIST)*, 3(3):56, 2012.