

A Movie Timeline for a Movie Recommender

Federica Cena, Elisa Chiabrando, Andrea Crevola*, Martina Deplano, Cristina Gena, and Monica Perrero*

University of Torino, *3Juice - Italy {cena,chiabrando,deplano,gena}@di.unito.it,{andrea.crevola,monica.perrero}@3juice.com

Abstract. This paper describes the movie timeline design for the ReAL CODE (Recommendation Agent for Local Contents in an Open Data Environment) project. The timeline is aimed at providing a novel and engaging way of interacting with final users, highlighting the peculiarity of the ReAL CODE application, which differs from traditional movie recommendation sites: it also provides tools and facilities to manage movies according to user-relevant information such as people, places, and time connected to the movie. Moreover the timeline proactively visualizes the information according to the user model, first showing movies related to the user preferred features.

Keywords: information visualization, movie recommender, timeline

1 Introduction

ReAL CODE¹ (Recommendation Agent for Local Contents in an Open Data Environment) is a movie social network and recommender system that aims to become a playground for the final user by involving her personally and emotionally. While most of existing movie recommender sites only support user during the movie choice, assuming that the activity of watching a movie is a standalone task, ReAL CODE considers movies as an important part of people life, often related to special moments, places and other people, that recall feelings and emotions. For this reason, the application's goal is to support users during activities of remembering, sharing and planning new movie experiences by offering them ad-hoc features, identifying alternative ways of recommendation and realizing an innovative and engaging user interface, as we will better explain in the next sections.

From a technical point of view, ReAL CODE is an open, interconnected and semantic database of movie contents. Contents and users information are retrieved from external sources, such as TheMovieDatabase² and Facebook³, and automatically mapped into its own knowledge and format. In the same way, ReAL

¹ <http://www.ReALCODE.it/>. ReAL CODE is a research project funded in the context of POR FESR 2007/2013 of the Piedmont Region, Italy.

² <https://www.themoviedb.org/>

³ <http://www.facebook.com>

CODE own information will be available in a semantic and open format, so that everyone will be free to reuse and redistribute it. Regarding recommendations, suggestions will be given using both collaborative filtering and content-based approaches, taking advantage of user model interoperability in order to obtain a big amount of information about the users and their interest, and to overcome the cold start problem in recommendations.

As for the user experience, the challenge is to realize an innovative and engaging application, that differs from traditional movie recommendation sites. In addition of providing suggestions, ReAL CODE provides users with tools to quickly and intuitively manage movies: on the one hand, they can swiftly link one particular movie (they already watched or they want to watch) to people, places, time and other information; on the other hand, users can browse their “movie history” in ways differing from a traditional list view. To this aim, we designed a *timeline* visualization with the aim to improve and enhance the user experience. It will be described in detail in Section 3.

2 A Scenario

To better understand the main ReAL CODE features, let’s take a look at a possible scenario.

Francesca accesses to ReAL CODE and, among the suggested movies, she selects “Flashdance”, a movie that she used to see during her teenage years with her friends. She adds a few information about her sight experience: where she watched it (in her hometown, Turin), when (she select a specific date) and with whom (with her friend Roberta, who is also a ReAL CODE’s friend). Immediately Roberta receives a notification about Francesca’s activity and she adds a comment on it. Then, she decides to take a look at Francesca’s timeline and she browses her movie and event’s history, discovering a lot of interesting movies and events she likes. Among these events she finds out that next week there will be a movie festival about her favorite director in her town, so she decides to join this event and to share it to her ReAL CODE’s and Facebook’s friends. This event will be added to her diary and it will be visible on her timeline as a future event.

3 The timeline

The visualization of information regarding movies data sets has a long tradition in information visualization [1]; among the others we can cite InfoZoom, Spotifire, FilmFinder, etc. Also the exploitation of timeline, a graphical representation of a chronological sequence of events, has a well-known tradition. First of all, we can cite Lifelines⁴. Currently many web-based interfaces use timeline to better represent events in different domains, from education and demonstrative case studies, to personal and social events. Also learning activities are often

⁴ <http://www.cs.umd.edu/hcillifelines/>

associated with the use of chronological interfaces, in order to improve the understanding and the memory of sequential facts. For example, history's timeline biographies of important personalities, sequence of important events and artworks can be visualized thanks to the SIMILE timeline ⁵ used, for instance, in the Europeana⁶ project.

With the development and improvement of the graphic skills, the concept of timeline passed from a simple list of textual events to a static image with pictures, up to interactive timelines, where the ability of the designer to visualize complex data in a clear and complete way became the most important contribution to a good user experience. The current most famous personal timeline is doubtless the Facebook profile⁷, where users can visualize posts, photos and activities by scrolling the page or through the years list, and select important items that have to be seen in the top of the profile and hide undesired posts. Another recent example of subjective timeline is the Foursquare time machine⁸. Thanks to an appealing interactive interface, users can follow their checkins in the map in a chronological way, both automatically or manually one-by-one.

In ReAL CODE the timeline is an alternative way to visualize a user's movie and event history (see Figure 1). With the timeline user can quickly have a visual impact of all the movies and events that recall to her particular feelings (both positive or negative) and she can easily navigate through them. This kind of visualization is more fascinating than a simple "Movie I've watched" or "Movie I want to see" list: browsing the timeline can become an entertaining activity itself, and through the serendipity mechanism, user can jump from her timeline to a friend's timeline, from a movie or an event to another, discovering new and potentially interesting things.

Graphically, timeline is represented as a picture show (see Figure 1) that the user can scroll up and down, moving through time or movies/events. User can zoom in and out the timeline to increase or decrease the coarseness of temporary scale: it is possible to have a quick overview of her whole movie experience or to explore more in detail specific periods of her life, re-experiencing feeling and sensation related to the movie/event.

When the user enters the timeline the system shows her a sort of collage of all the movies and events she watched or took part in, grouped by year (Figure 1A). Some posters are more visible than others, according to parameters that will be explained in the following. The user can select one particular year by clicking on it. She can then see all the movies and events grouped by month and she can browse them scrolling up and down the menu on the left (Figure 1B). If she selects a particular month, she can then browse movies and events day by day (Figure 1C). For each movie it is immediately possible to see with whom it has been watched, some related recommendations (Figure 1D), and it is also possible to obtain further information opening its descriptive page.

⁵ <http://www.simile-widgets.org/timeline/>

⁶ <http://www.europeana.eu/>

⁷ <https://www.facebook.com/about/timeline>

⁸ <https://foursquare.com/timemachine>

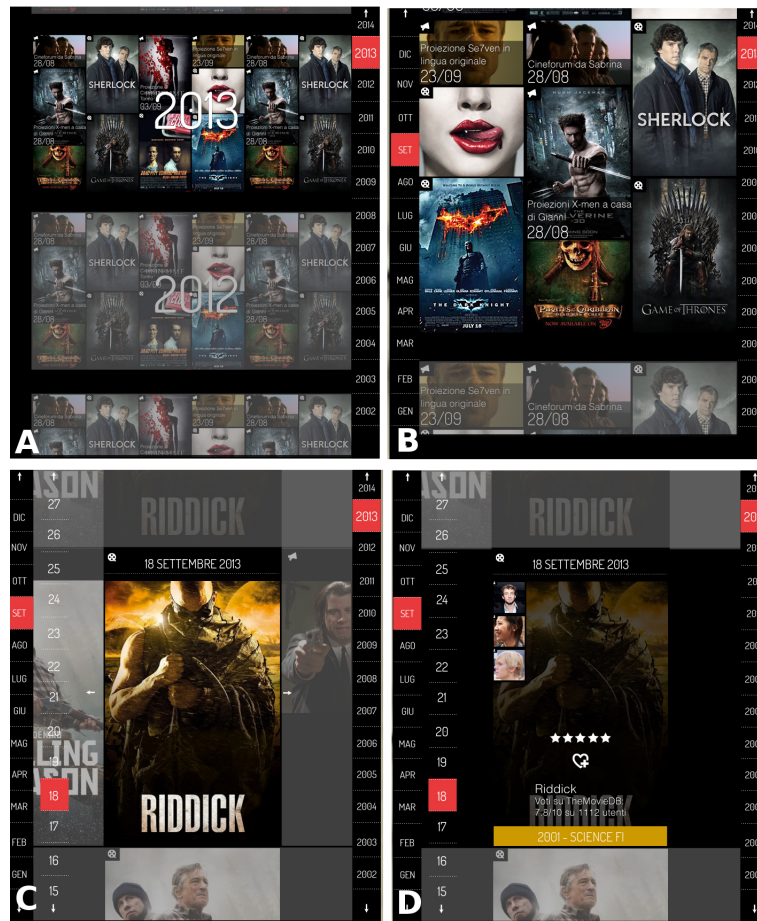


Fig. 1. The ReAL CODE Timeline.

When the user is visualizing the timeline in overview modality (fig. 1A and 1B), if these periods are particularly full of movies and some selection need to be made by the system, foreground movies are selected according to the content based part of the user model. This component considers the user preferences towards genre, actor, actress, director, language, production country, keyword and assigns weights to each of these features according to explicit and implicit preferences of the user. Thus, the foreground movies are those ones having the strongest global weight automatically assigned from the user modeling component. The user can disable this personalized view, and in this case foreground movies will be the last movies inserted in the timeline. Moreover, on the timeline, user can also apply some filter: she can decide to see all the movies belonging to a specific genre or to see only movies he has watched with a specific person.

The timeline is still a work in progress, and during the next months we are going to test it with final users in order to verify if its goals have been reached. Then, we will redesign the timeline interface according to the test results.

References

1. S. K. Card, J. D. Mackinlay, and B. Shneiderman, editors. *Readings in information visualization: using vision to think*. Morgan Kaufmann Publishers Inc., San Francisco, CA, USA, 1999.