Exploring the Cultural Heritage of a Territory through the Cinematography Production

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ABSTRACT

The cultural heritage of a place is mainly presented in websites and guides that describe Points of Interest focusing on specific topics or temporal windows. As such, they offer a detailed but fragmented viewpoint of the territory they describe and weakly support the provision of a longitudinal perspective on places and people's lifestyles.

In the Revisualizing Italian Silentscapes (RevIS) project, we aim to achieve this perspective by exploiting cinematographic production through the multifaceted exploration of films and their scenes in a movie catalog. Providing advanced search support enhances the preservation and fruition of the cultural heritage related to early and recent movies. However, in this paper, we focus on exploring Points of Interest through the description of landscapes and related places or locations in films, a novel aspect we introduce. Specifically, we present a module of the RevIS app supporting the location-based exploration of movies.

CCS CONCEPTS

• **Information systems** → *Web searching and information discovery*; • **Human-centered computing** → *Interaction techniques*.

KEYWORDS

Film catalogs, Cultural Heritage, Natural Heritage

1 INTRODUCTION

Most mobile guides present cultural heritage sites in a location-based hypertext [2, 9, 11] that enables users to explore Points of Interest by retrieving detailed information about them. However, as these guides focus on specific topics or temporal windows, they weakly support the provision of a unified, historical perspective on places. To address this issue, this paper brings a different perspective on cultural heritage by relying on cinematographic archives to exploit the engaging potential of movies to present cultural heritage.

The work we describe is part of the RevIS project: Revisualizing Italian Silentscapes 1896-1922 (RevIS) - Landscapes and locations of the first Italian cinema one hundred years later.[1] This project aims to enhance the exploration of a territory's history through the inspection of the cinematographic production involving it. Unlike traditional applications for the presentation of cultural heritage (e.g., [4, 10, 12]), we use cinematographic production to unify the perspective on the landscape and people's living habits through the narrations offered by the films. Ideally, this approach might complement traditional tourist guides to enrich their descriptive capability.

The RevIS project investigates how Italian films, images, and narrations produced between 1896 and 1922 represented territories and landscapes. Within this project, we created a movie catalog that supports the search for information about films and landscapes offering a rich snapshot of places in different time points through the multi-faceted inspection of movies' data. By browsing the catalog through the RevIS app, the user can search for information by focusing on film, Points of Interest, production locations, and several other aspects to answer specific information needs.

In the present paper, we describe the portion of the RevIS app supporting the location-based exploration of the movie catalog as
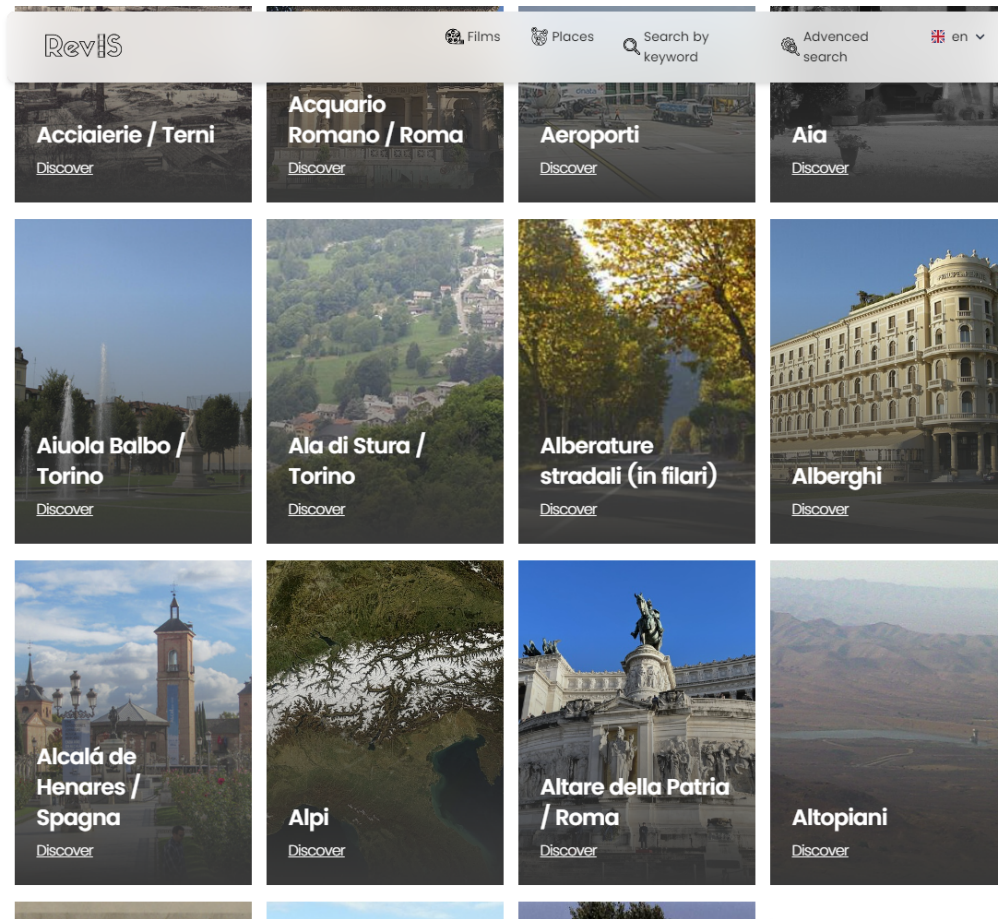
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[1] https://silentscapes.eu/

Figure 1: List of places.

a tool to discover the cultural aspects of specific Points of Interest. Our work differs from the the tourist guides recommending locations related to famous movies (e.g., Harry Potter filming locations guide[2]) because we use films as Cultural Heritage descriptors and witnesses of living habits in geographical areas, rather than proposing tourist itineraries to promote specific Points of Interest. Specifically, we aim to support bidirectional information access, from films to the related locations, and from locations to the films describing them, to satisfy individual information needs.

The remainder of this paper is organized as follows: Section 2 positions our work in the related one. Section 3 describes the RevIS app and Section 4 concludes the paper.

2 RELATED WORK

Mobile guides presenting cultural heritage information convey fairly strict perspectives of Points of Interest, rather than unified presentations of their history and traditions because they rely on data sources describing particular artistic and historical features of places. For instance, GUIDE [6] and Riot! [3] presented specific features of places in two British towns. CHIP [14] and PIL [10]

personalized the content presentation in a museum. Sansonetti et al. enrich the presentation of Points of Interest with multimedia content by exploiting semantic links in Linked Open Data to find relevant resources [13]. Braunhofer and Ricci extended mobile guides to take the user's context into account during the visit to a place [4]. Furthermore, recent works advance the presentation of information about Points of Interest through immersive environments and Augmented/Virtual Reality [5, 7, 8]. Finally, researchers have experimented with smart objects [1], and haptic interaction with the system [12] to improve the user experience.

In this paper, we exploit cinematographic production to present cultural heritage about places unifying the perspective on the landscape and people's living habits through the narrations offered by the films.

Traditionally, the interest in film studies tends to veer towards cities. As of the early 90s, the cinema/landscape connection has extended itself to other scopes of landscape, images, and narrations above all, focusing on categories such as "space", "place", "view", "panorama", "environment", "territory", "map", "location", and "set". This has led to the design of ontologies to represent information about movies and favored studies relating cinema and geography, cartography, and historical context. However, despite these efforts,

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[2]https://www.visitbritainshop.com/gb/en/harry-potter-filming-locations-guide

Figure 2: View of garden Aiuola Balbo.

Figure 3: Aiuola Balbo. Source: Robinet padre e figlio (1912). Courtesy Eye Filmmuseum / Desmet Collection.

current movie archives offer item-centric information-filtering functions and return simple result lists that hide the interconnections between movies' narrations and landscapes. For instance, the British Council Film archive[3] supports a search by topic function based on a limited set of pre-compiled topics such as agriculture, London, and Shakespeare. Moreover, Il Pollo Ruspante[4] offers basic filters to search the movie archive like title, director, actors, and production year.

Our work supports the navigation of the archive through a rich set of features, including movies' geographic and historical context, thanks to the rich semantic representation of films developed within the RevIS project. This enables the exploration of a territory through the movies that describe it.

3 EXPLORING A TERRITORY THROUGH REVIS

The RevIS app relies on an articulated semantic representation of the knowledge about films that makes it possible to specify several types of information, among which:

- Basic metadata such as title, directors, actors, and production year.
- A description of the places under the viewpoint of the movie production, in terms of narrated places (i.e., places that have a role in the story), shooting places (i.e., places that the movie has been shot but not necessarily the narrated places), the camera positioning places (i.e., places where the camera was positioned while shooting some other place).
- Information about the places where the scenes of a film have been produced, linked to public ontologies like AAT[5] and geographical knowledge sources such as TGN[6] and

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[3]https://film.britishcouncil.org/resources/film-archive
[4]https://ilpolloruspante.unime.it/index.php/category/record/
[5]Art & Architecture Thesaurus of the GETTY Research Institute, https://www.getty.edu/research/tools/vocabularies/aat/
[6]Getty Thesaurus of Geographic Names of the GETTY Research Institute, https://www.getty.edu/research/tools/vocabularies/tgn/

OpenStreetMap[7] to retrieve additional information about the places.

The connection of films to geographical information sources makes it possible to manage the movie archive as a Geographical Information System that shows the details of the film, the photos extracted from it, and extra information about Points of Interest, such as their location on a map.

Based on this representation, RevIS supports the exploration of the movie catalog focusing on different perspectives on movies and the landscapes they present. In the following, we consider the geographic exploration. The app offers a standard search function to select the places of interest. These can be either specific Points of Interest, such as "Terni / Acciaierie" - Terni / steel mills, or place types like "Aeroporti" (airports) and Alberghi (hotels); see Figure 1. By browsing the results, the user can inspect the corresponding places to learn more about them.

By clicking on a place, e.g., "Aiuola Balbo" (a garden in Torino city), the app shows detailed information about it, a recent photo (Figure 2) and a list of movies whose scenes have been produced there. The user can thus identify the available narrations involving the place at various time points, depending on the production year of the retrieved films. By clicking on the photo of a specific movie, the user can retrieve its detailed information and access multimodal data about the selected place. This includes pictures and, if available, links to visualize the scenes of the film that narrate the place, shot in that place, or with camera positioning in that place. The access to specific scenes is based on the availability of catalog units that include the scenes (catalog units can be roughly described as a set of sequences of the movie). For instance, the user can view a picture of Aiuola Balbo from a scene of "Robinet padre e figlio" (Robinet father and son) shot in that garden. The photo shows how

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[7]www.openstreetmap.org

the garden looked around 1912 through a focus on its benches; see Figure 3.

The visualization of places shows the scenes of films as reports to describe how they looked when the movies were produced. Thus, the sequence of photos (and possibly videos) that the app shows supports the inspection of the evolution of landscapes. Moreover, the characters appearing in the scenes, and the narrated stories may convey information about people's lifestyles in the temporal window described by the movies, thus providing additional information about places' histories.

The RevIS app is still under development. In the future, we will implement a quicker way to explore places as a timeline to describe the place at the available time points, linking the corresponding photos taken from the movies in the catalog.

4 CONCLUSIONS AND FUTURE WORK

We presented some of the information search functions offered by the RevIS app, which we developed within the Revisualizing Italian Silentscapes 1896-1922 (RevIS) project. This app supports the exploration of a movie catalog by focusing on movie details enriched with information about the historical and geographical context they describe.

The RevIS project is ongoing and we are extending the film database underlying the RevIS app. It can be noticed that, even though the RevIS project focuses on silent movies produced between 1896 and 1922, the app architecture is general and can be applied to a broader movie domain. From this perspective, we will investigate how to extend the movie catalog to more recent movies. Our future work also includes evaluating the RevIS app with users to test the user experience with it and its capability to satisfy specific information needs.

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