

# A Web system for the generation and management of inclusive itineraries in museums

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## ABSTRACT

The tour guides intents to describe what they want to show at each moment of the visit. The relationships, stories and anecdotes that surround the visit use to be the main reason to the tour success. Nowadays, it is possible to find on Internet the list of what to visit when you arrive at a place, and even detailed information about it. However, it is not so easy to recreate the added value of an expert person, who is able to find the way to create interest, as well as to answer questions, connect stories and know how to tell them. In addition, the museum visitors has his or her own needs, as for example a blind, who will use different senses to understand the artworks: listening to the stories, touching them, etc.

Regarding the related research work, Wolff et al. [3], seek to use narratives as a means to improve collaborative learning and the exploration of the cultural legacy. The work by Lara-Clares et al. [1] defines a narrative model for annotate itineraries with narrative elements (characters, artworks, references and events) and descriptions extracted from Linked-Open Data Resources. Using this narrative model, we have been researching in the generation and management of itineraries and in the development of the related prototype MPOC, published in <http://aluned.laraclares.com/>.

To automatically generate itineraries to guide cultural visits it is needed to define the itineraries based on a variety of descriptions of the specific elements to visit. To this end, a narrative model is defined to organize coherently into itineraries the information retrieved from different open linked data sources. The main steps are the identification of valuable information from external repositories and its enrichment with metadata (annotation). After, the selection of the concrete information or descriptions for each itinerary is carried out using different Natural Language Processing and Information Retrieval techniques: according with the annotated descriptions, a graph is generated with the existing narrative elements in each description. Finally, the textual paragraphs included in the descriptions are selected according to the similarity and dissimilarity of their narrative elements in the graph. In addition, the prototype allows both the expert supervision of the itineraries and the user navigation on the selected itinerary.

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In the project, a user experience survey [2] was developed based on the Technology Acceptance Model (TAM) to determine the perceived usefulness of the technologies selected in the project. The population under study was UNED students with disabilities, having received a total of 278 valid responses confirming that 92.1% of the students were using a smartphone (so the prototype is deployed in a smartphone with a browser). In the future work, the itineraries are going to be supervised by experts and validated with users.

## KEYWORDS

museums, natural language processing, digital curation, linked data, narratives, inclusive societies

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