"A window into the past" – an immersive interactive experience at the St. George's Castle

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Abstract. The objective of this project is to create interactive multi-linear narratives whilst exploring the Castle of São Jorge in Lisbon. The final perception of the story depends on the trajectory of each of the users and how they choose to discover the Castle itself. Several versions of each micro-narrative were recorded, accommodating for all possible trajectories and pathways that users can take. Video contents from specific points of the Castle will be displayed automatically whenever the user enters into certain predefined GPS locations, inadvertently creating their own narrative sequences. Not asking users to take explicit decisions regarding their own 'narrative paths', we can avoid breaks in the audio-visual immersion experience.

Keywords: interactive video, location based, non-linear narratives, data-based narratives.

1 Introduction

The production of non-linear interactive audio-visual content faces several difficulties on a conceptual level, as well as in its practical implementation.

Despite several experiments with non-linear narrative audio-visual content, some problems still persist, mainly to do with narrative coherence (the cause and consequence properties of stories). Some researchers argue that it would be impossible to predict and construct a coherent story along all possible trajectories and pathways that can be taken by interactive users.

Manovich raises questions further about the compatibility between pure non-linear interactive manipulation and narrative coherence.

Also, the need to pre-record all content catering to all possible trajectories and pathways poses quite the challenge due to the sheer size of the task in producing a very wide narrative.

Another problem is the design of the interface of the interactive content. The fact that the user is obliged to interact with an application may take them away from their state of complete audio-visual immersion. Here, the technological fascination that sometimes is created in those interactive narratives clash with the overall enjoyment of the project by the user.

2 The project

For this project we developed an app that is pre-installed in a Samsung Note 8 tablet with 4.4.2 Android version. For logistical reasons, over the next three months, the application will only be available for guided tours. This will allow us a more controlled testing environment. Each visitor will have access to a tablet with the interactive application.
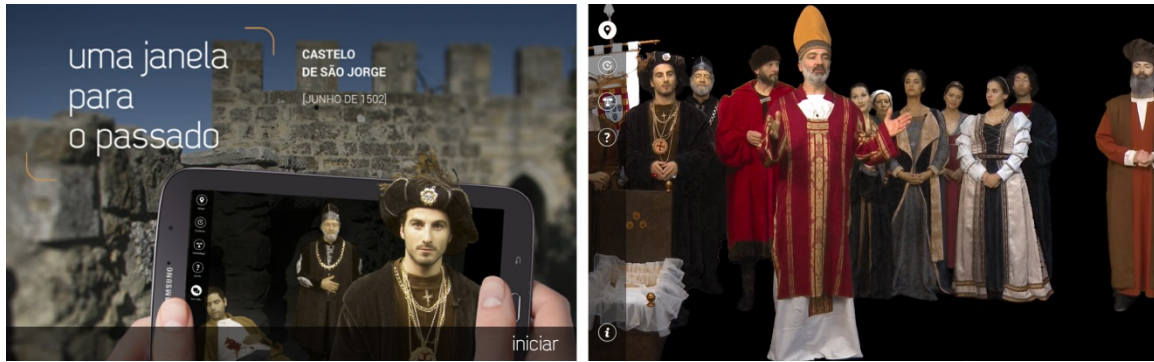
Fig. 1. App screenshots (welcome screen and video screen)

The application must manage a database of twenty-nine micro-narrative historical video recreations. It must suggest to the visitor, the one that is more consistent with the story depending on where he is and the videos already watched.

The micro-narrative videos are in HD with 3600x800 pixels, produced to allow a 360 degrees experience. The micro-narratives were recorded using three video camera rig. Actors were placed in front of green chroma key background allowing us to obtain only their visual representation. Various versions were recorded in order to have the three possible endings.

The visitor must rotate the device around himself to watch the entire frame of the video. The device's magnetoscope allows the video to be displayed in the correct direction.

Fig. 2. Micro-narratives panoramic videos

Using some algorithms it is possible to transpose to the map of the castle, the GPS position of the visitor as well as the locations where there are recreations. We had some difficulties due to the nature of this map and the necessity of having a good accuracy. The visitor path is recorded in order to assist in the calculation of the probability of each video.
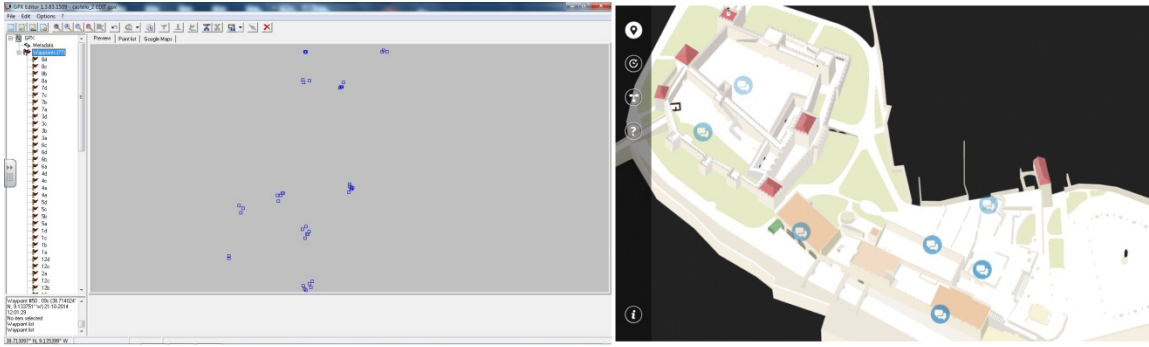
Fig. 3. GPS info and translated geo points

In addition to the map, the visitor can access more information. There is a screen with information about the historical context and another with the relationships between the various characters.

For a better understanding of the project, you can watch this video:

http://youtu.be/Xf5rWCdjbeg

Or refer to the documentation:

https://dl.dropboxusercontent.com/u/13670284/Micro-narrativas/A%20window%20into%20the%20past.pdf

3 Database management

This story will be understood through the sum of several "micro-narratives", which have a direct relation with the scenes shown along the various spaces of the monument. The narrative structure will unfold into multiple possibilities according to the choices made by the user when exploring the monument. The story has three different finals depending on the path followed by the visitor.

This project tries to address the immersion problem by using a mathematical matrix to calculate the most relevant video for each location from a video database and not just the usual "choose path A or Path B" method. Narrative choices are made according to the way the visitor navigates in the Castle and not through a direct question.

The nature of the 360 degrees videos forces the user to choose certain dialogues while leaving others unseen. This is also a form of indirect choice of unfolding the story.

A matrix system will register information regarding the path of the users in the Castle and the dialogues they see. The use of matrices, that co-relate the micro-narratives with the physical space of the Castle was the way found to build a complex narrative structure. Using this information, the system computes which are the best videos to be shown at each location, contributing to a more coherent narrative.

The global context will be acquired by watching the diverse micro-narratives which correspond to the various scenes spread all over the physical space of the Castle. By visualize the different scenes the visitor will develop a global perception of the story. Being given to the visitor total liberty of movements the different paths will generate diverse micro-narrative sequences.

The visiting experiences will develop a more personalized format. The global narrative perception will be determined by the way the user choses to explore the space.

All these choices however are unknown to the users as we are trying to give them a total sense of freedom and not establish or force upon them pre-defined routes around the Castle. Their choices will generate individual user experiences, with an almost endlessly number of possible narrative sequences. The objective of this is to make the technology "invisible" and allow the user to focus only on the narrative.

4 Testing the project

The application is now available at the Castle of São Jorge since mid–November 2014.

The user's path, all interactive decisions and a final survey will be registered for statistical purposes. Every time a device is used, it will generate a file that logs the users' interaction patterns, the videos they watch as well as their trajectory through the Castle.

This information will subsequently be analysed in order to see whether the multi-linear structure can accommodate all the different possible trajectories or pathways that can be taken in the Castle while still maintaining narrative coherence.

This registration will allow a future evaluation of the interface's efficiency and performance of the interactive matrices mechanism.

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