Game Atmosphere Archiving Thanks to Virtual Reality for the Preservation of the Video Game Cultural Heritage

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Abstract

The video game heritage is being preserved especially on the Web: comments, screenshots, sounds, videos, etc. But one important element is missing: the environment in which we play (game atmosphere) is one of our strongest memories. This article describes an investigation-based method to record game atmospheres, the four atmospheres we are archiving (one bedroom, one living room, and two game room atmospheres), the interactions allowed in these virtual environments, and some technical points about how to access these atmospheres (on the Web or thanks to a virtual reality system).

Keywords: atmospheres, video game, preservation of the cultural heritage, virtual reality, archiving.

Résumé

Le patrimoine lié aux jeux vidéo est conservé principalement sur le Web : commentaires, copies d'écran, sons, vidéo, etc. Mais un élément important manque : l'environnement dans lequel nous jouons (l'ambiance de jeu) est l'un de nos plus forts souvenirs. Cet article décrit une méthode basée sur une enquête pour relever les ambiances de jeu, les quatre ambiances que nous archivons (les ambiances d'une chambre, d'un salon et de deux salles de jeu), les interactions permises dans ces environnements virtuels et quelques points techniques à propos des moyens d'accès à ces ambiances (sur le Web ou grâce à un système de réalité virtuelle).

Mots clés: ambiances, jeux vidéo, conservation du patrimoine culturel, réalité virtuelle, archivage.

Zusammenfassung

Speziell das World Wide Web macht sich um die Bewahrung des Videospielerbes und -andenkens verdient. Im Internet finden sich Kommentare und Besprechungen, screenshots, Sound- & Video-Beispiele. Nur Eines fehlt: Die Umgebung in der wir gemeinhin spielen lässt sich im WWW nicht wiedergeben. Dabei prägt die lokale "Spielatmosphäre" die Erinnerungen jedes Videospieler. Der Artikel beschreibt 1. eine Recherche-basierte Methode um "Spielatmosphäre" aufzunehmen, 2. die vier Arten der Atmosphäre die wir erreichen (Wohnzimmer, Schlafzimmer sowie zwei unterschiedliche "Spielzimmer"), 3. die Interaktion, die zwischen diesen vier Räumen möglich ist, 4. sowie einige technische Details, wie man diese Atmosphären über das WWW oder ein Virtual-Realiy-System erreichen kann.

Schlüsselwörter: Atmosphären, videospiel, Bewahrung des kulturellen Erbes, virtuelle Wirklichkeit, archivierend.

I. Introduction

The video game market is now bigger than the cinema market. This economic fact is the result of a continuous development. Indeed, while video games attract the kids, the number of adult players constantly increases. Thus, video games are a part of our culture (Berger, 2002; King & Borland, 2003; Poole, 2000).

The video game industry is now more than 30 years old and its cultural heritage is being preserved following two main approaches. On the one hand, there are a lot of virtual museums on the Web, and on the other hand, there are exhibitions, but they are very rare. For example, there is only one permanent exhibition (in Berlin, http://www.computerspielemuseum.de/).

The video game exhibitions are very hard to set up because the hardware and the software can be too rare and can be broken down. This is why is it easier to do it virtually. On the Web, we can find information about all the games: comments, screenshots, sounds, videos, etc. We can also find game copies and emulators to run them on new computers (Esposito, 2001; Esposito, 2004). Emulation can preserve the possibility of playing and virtual museums can preserve many things around the video games, but one important element is missing: game atmospheres.

Indeed, the environment in which we play is one of our strongest memories: the place, its arrangement, the light, the other players, etc. So, how can we preserve these atmospheres? How can we add this kind of atmospheres to virtual museums and real world exhibitions? How can we connect these atmospheres with information about the games?

Besides, virtual reality (Stanney, 2003; Fuchs & Moreau, 2003) offers many application domains. For example: engineering, medical, education, and so on (Stone, 2002). Heritage preservation is one of these application domains (Stone, 2000; Beuthel, 2005). So, we can wonder how virtual reality can help us to preserve the video game heritage.

This article describes a method to record game atmospheres, the four atmospheres we are archiving (and the interactions allowed in these virtual environments), and some technical points about how to access these atmospheres.

Information about this project, screenshots and game atmospheres can be found here: http://www.utc.fr/inspiration/english/sousprojet/description/description.html

II. A Method to Record Atmospheres

The first step of our method is an investigation. On discussion forums, we ask players to narrate their playing experiences: what they feel before, during, and after the game. We provide them with some directions concerning the perception of their environment: the place, what we can feel using our five senses, contacts with other people, etc. Using the discussion forums allows some players to enhance the others' answers.

The second step is the synthesis. The goal of the synthesis is to identify typical elements of atmospheres and to group these typical elements into representative atmospheres. During this second step, we can use other ways to find missing typical elements (for example, films).

Each atmosphere is defined by:
- a year,
- some words about the place,
- the layout of the place (a picture),
- a list of the typical elements (lights, sounds, furniture, other objects, people, etc.),
- a description of the interactions allowed in the virtual environment,
- a list of the games that have to be in the place.

The last step is divided into a few parts. The modeling of the objects is done thanks to 3D Studio Max (http://www.discreet.com/3dsmax/). Then, the assembly of these objects is done thanks to Virtools (http://www.virtools.com/). This technology also allows us to add lights and sounds, and finally to define behaviors. During this third step, we can use freely available objects (for example, a chair).

III. Four Game Atmospheres and Interactions

Fig. 1: First atmosphere (a bedroom in 1995).

Our first game atmosphere is a bedroom in 1995 (see figure 1). The user can catch a game cartridge, put it into a Super Nintendo console, and get information about the game on the TV screen.

Fig. 2: Second atmosphere (a small game room in 1989).

The second atmosphere is a small game room in 1989 (see figure 2). The user can push the buttons of the arcade cabinets to get information about the games on their screen.

Fig. 3: Third atmosphere (a big game room in 1983).

The third atmosphere is a big game room in 1983 (see figure 4). The interactions are the same as the interactions of the smaller game room.

Fig. 4: Fourth atmosphere (a living room in 1982).

The fourth atmosphere is a living room in 1982 (see figure 4). The interactions are the same as the interactions of the bedroom, but the console is an Atari 2600, and now the user sees his arm catching the cartridge.

Thus, these virtual environments allow:

- immersion (if we use an immersive system),
- exploration (we discover the atmosphere),
- object manipulations (catching a cartridge, pushing a button, etc.), see figure 5,
- getting information (accessing knowledge), see figure 6.

Fig. 5: Object manipulations (catching a cartridge).

Fig. 6: Getting information (accessing knowledge).

IV. Accessing the Game Atmospheres

Thanks to the technology that we use (Virtools), the users can access these atmospheres on the Web (using the Virtools Web Player plug-in, see figure 7). Thus, these atmospheres can enhance existing virtual museums. But, the users can also access them using a virtual reality system (see figure 8). Hence, we can enhance an exhibition by adding game atmospheres and by linking them to the exhibition: information that we get can contain a map of the exhibition and where to find the game.

Fig. 7: An online game atmosphere thanks to Virtools Web Player.
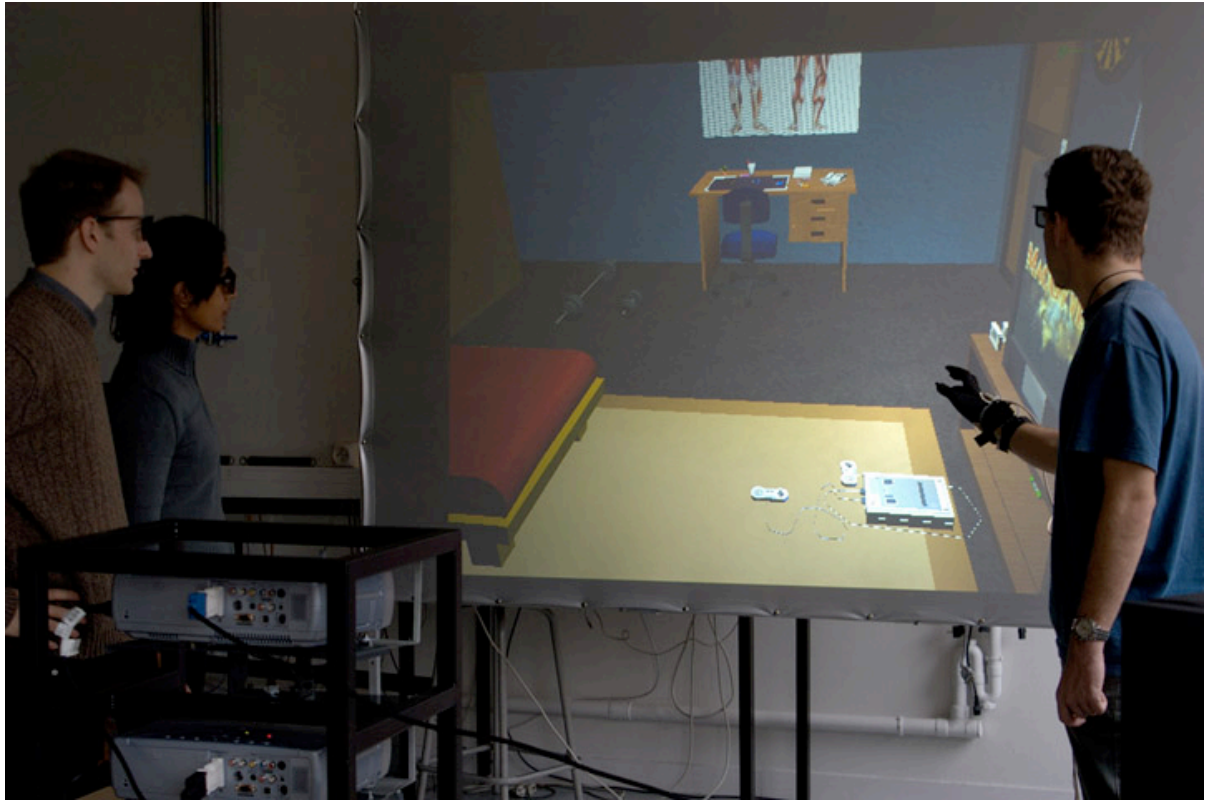
Fig. 8: Example of a virtual reality system.

This is a new way to access information about games. This is not like a fast database access; it is much more like a walk through game atmospheres that brings you to games you did not look for at the beginning.

V. Conclusion

We have seen how to record game atmospheres. We have talked about the interactions allowed in our four virtual environments. And we have seen how to access them. Hence, we show how to preserve the game atmospheres.

The next step is to publish these atmospheres on an existing website dedicated to the video game heritage. Later, we will work on sharing these atmospheres (several users inside one atmosphere) and handling interactions between users.

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