A Need for Interactive Music Videos

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Abstract. We present a system that creates new versions of a music video dynamically showing a rapper on the fly. There are also versions which allow users to interact with the content in real time. We present results from experiments asking an audience how they like these possibilities.

1 Introduction

Music videos [7,8] have been companions to modern pop and rock songs for decades now. However, all music videos share one common property: they are static. Once having been filmed, they remain as they are, never again change, though in the past more and more examples of interactive selection of content and perspectives have appeared [1,2,3,4,5,6]. New computing technologies on the other hand nowadays make possible real-time rendering of complex scenes with stunning, photo realistic quality. These features have mainly been used in modern high-quality computer games. In our work we transfer this technology to the realm of music videos. This makes it possible to produce dynamically produced music videos, having the capability to change, to adapt, to be created newly again and again, each time they are watched. Consumers can even interact with them just like they can interact with computer games.

2 Automated and Interactive Music Videos

The practical work of this study was the creation of a video clip for a rap song using the engine Unity 3D. At first we have analyzed hundreds of video clips of rap songs, and categorized their content. Then we analyzed the rap song at hand and planned the scenes according to the song text. The scenes have been realized directly in a 3D environment which we created in Unity 3D.

The rapper "Massimo Schena" is a young Austrian musician. He writes usually about actual and major issues facing teenagers in the community. The main topics are drug abuse, unemployment of teenagers, the lack of chances offered to teenagers, the lack of education and other teenager related issues.

At first we created a 3D character of Massimo using the Blender 3D character creation tool. Then the animations of moves which he likes to do during a performance were created with the same tool. We have created the animations according to a video

clip capturing the moves. The rapper mostly prefers dance styles like break dancing, freestyle, dougie, hip hop and jerk and the hand gestures included mainly def wave, the slim shady chop, and the ninja star.

After the creation of the character and the animations, we selected an appropriate song from the repertoire of Massimo called "Mehr Perspektiven"[1], a song demanding more chances and options for teenagers to live a fruitful life.

Fig 1. Suicide

Fig. 2. Drunk

Based on the scenes, we created three different versions of a video. The static version never changes, while the automatic version can change camera angles, type and number of characters seen, and the sequence of the scenes, which are dynamically adapted on the fly. Finally, the interactive version makes it possible to actually change scenes. For instance, in scene 5, the viewer can prevent the teenager form committing suicide by clicking the mouse.

3 Experimental Evaluation

We asked a test audience to evaluate, whether our enhancements concerning interactivity and automation indeed lead to more entertaining videos. In particular we started with two hypotheses:

1. Automation and interactivity make video clips more interesting / attractive.

2. Automated and interactive video clips are preferred to be seen in the future.

We chose a within-subjects design with 20 subjects, watching the static, the automated, and the interactive videos 8 times each. In order to check for memory effects we chose ten subjects to watch the videos sequentially, while the other ten subjects watched them in random order (in the end there were no differences between the groups). We chose individuals as much as possible from different age, gender or social groups. However, the most reachable audience for us were young students and therefore the majority of our audience is rather young. After watching the videos we

[1] https://www.youtube.com/watch?v=veyDvOcGUBM

asked the participants to fill out a questionnaire containing 20 questions. While 80% of respondents think that the third video clip is more preferable for the near future, 15% think the second video clip and only 5% of them think that the first video clip will be more preferred.

Also, we have implemented a paired t-tests to pair questions for testing our hypotheses. As a conclusion we can say that both automation and dynamical change, as well as interaction will be important features to add to future music videos. Above all, interaction is key to create music videos which keep the audience interested. As music videos try to bring a visual stimulus to the audience, it is important to keep this stimulus fresh and surprising throughout many subsequent presentations, and people want to be able to influence the outcome at least to some degree. This is similar to normal stories, which become boring after a while, since we think that surprise, change and new stimuli are key to keep an audience interested over some time.

4 Conclusion and Future Work

Our hypotheses are confirmed by our experiments, which show significant differences between the presented videos. However, more research is definitely necessary to include more viewers from different age groups, test for differences between gender groups and social background, or come up with videos with different content, and higher quality.

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