The Audience in the Role of the Conductor: An Interactive Concert Experience

Marco Speicher
DFKI GmbH
Saarland Informatics Campus
marco.speicher@dfki.de

Lea Gröber, Julian Haluska
Lena Hegemann, Isabelle Hoffmann
Saarland University
{s9lagroe,s9juhalu}@stud.uni-saarland.de,
{s8lehege,s9iehoff}@stud.uni-saarland.de

Sven Gehring, Antonio Krüger
DFKI GmbH
Saarland Informatics Campus
{sven.gehring, krueger}@dfki.de

ABSTRACT

The work we present is an interdisciplinary collaboration between the Saarland University Orchestra and students of media computer science. The main goal was to create an opportunity for the audience of a live event to engage and have an active influence on the course and mood of the event itself. Our concept was tested and implemented as part of the end of semester concert where an animation - projected on large public display - was musically supported by a live orchestra. The audience of that concert was able to influence the order as well as the mood of the musical pieces by the use of a web application on their mobile phone, and could so take actively part of show.

Author Keywords

Public display; Interactive concert; Mobile interaction.

ACM Classification Keywords

H.5.m. Information Interfaces and Presentation (e.g. HCI): Miscellaneous

INTRODUCTION

The project was an interdisciplinary collaboration between the Symphony Orchestra of the Saarland University, directed by Julia Neumann, and Media Informatics students. The main contribution was to make live concerts (more) interactive and show interactive animations during the closing concert. These animations were accompanied by live music of the orchestra. Moreover, the audience was able to influence the animation and consequently also the live music by a dedicated web application, and thus actively take part of the show.

The cooperation between Media Informatics and the Symphony Orchestra of the university offered several benefits to both fields of interest. Because playing live to film performances in a symphonic orchestra was not uncommon for the

Figure 1. This photo was taken during the end of semester concert event. The animation has been projected behind the orchestra, and is appropriate only visible for the conductor and the audience.

musicians, the adaptation period turned out to be very short. Such public events combining live music and large projected animations enjoy a consistently high level of public interest, great popularity. Furthermore, they attract even more target groups, like e.g. a film enthusiastic audience. Therefore, we added an interactive component to the so far auditive and visual combination of live concert and a large projected animation, i.e. users were able to change musical atmosphere by vote for a certain mood using their mobile phone. Once the conductor has started the animation, the audience can decide by choosing one of two moods via web interface how the animation should develop. Finally, the poll result is displayed on a separate view for conductor to manage the orchestra appropriate.

RELATED WORK

Nowadays more and more live concerts address themes and soundtracks of famous movies while presenting the appropriate film sequences. However, there are several approaches to make concerts (more) interactive [1, 2, 3]. The "Stanford Mobile Phone Orchestra[1]" investigated the use of mobile devices to make live concerts interactive. In their approach, they also made use of social media, their own cloud and web application to connect the audience with each other and the musicians themselves. "Rotations[2]" is an annual light/sound-

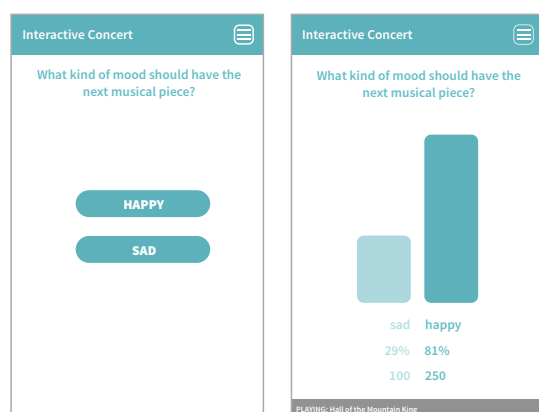[1] http://mopho.stanford.edu/
[2] http://www.rotationen.org/

Figure 2. This figure illustrates screenshots of the mobile application. left: poll view; right: conductor's view.

installation at the Saarbrücken Castle. The goal of the installation was to experience as "silent concert" by the use of wireless headphones for audio output, whereas the *u*-shaped inner facade of the Saarbrücken Castle was projected by animations, films and visuals in synergy with live-improvised jazz.

CONCEPT

Our main approach was to enable the audience to take actively part in the course of the concert. To make this possible, we have developed a web application, which allowed the users to vote for several moods of the chosen musical pieces. Any mood has been always accompanied by animations on a large projection wall behind the orchestra. The selection of music was made in consultation with the orchestra. The mainly classical pieces were royalty-free. For the selected music we thought about keywords that reflect and describe the mood of each piece as accurately as possible. While voting by using the web application, the user had to chose one of two tags (e.g. *happy* or *sad*) corresponding to the actual sequence of the different pieces. The orchestra was prepared to play each piece in three different moods, because it would have been impossible in the short preparation phase - both for the orchestra and for the animators - to study and animate more than three pieces. In addition, the conductor wrote special transitions, which enabled the orchestra to play the following five songs in succession, and to start the corresponding animations: Danse Macabre (threatening, impulsive, adventurous), Hall of the Mountain King (thrilling, dramatic, mysterious), Holberg Suite - Allegro Vivia (solemnly, contrary, desperately), Pelleas et Melisande Suite (quiet, sad, lonely), and Swan Lake - Dance of the little swans (cheerful, uplifting, exciting).

The web application builds the centerpiece of our project as it brings together the animation and the music part. The poll where the audience can vote for the musical mood and order is administrated within the web application, too. The main role of the poll administrator is to start and stop the different polls. When a new poll has been started, the audience is able to decide within a voting section of the application how

the animation and music should develop (see Figure 2). They can choose between two emotions (out of three possible for each music piece) in a given time period. The outcome of voting will then be displayed in a "conducting view" of the application. Besides, the web application also provides useful additional side information of the evening program, the project and the developers.

If the concert-goers enter our web application, they will be redirected to a help and information view giving a brief overview of how to participate in the polls. The users then are redirected to the voting view, where the polls appear and disappear if the administrator starts or ends them. Therefore, an administration area has been set up, where current status of the actual polls can be inspected. Besides that, the user model allows also the conductor to get information about the poll results.

CONCLUSION AND OUTLOOK

The main goal was to create an opportunity for the audience of a live event to engage and have an active influence on the course and mood of the event itself. The concept and design of the web interface itself is not aimed specifically at this single public event; it is reusable for different musical pieces with other animations or even different public events taking the audience into account. Nevertheless, it would be conceivable, for example, to re-use our concept in the field of the performing arts. It could also be interesting to let the audience vote solely on the mood of the music, and the orchestra or soloist would improvise accordingly. Even this scenario is feasible with our approach and thus may be worth further examination as some evidence would suggests that this form of interactive live concerts could have a revolutionary impact on the music industry.

ACKNOWLEDGMENTS

REFERENCES

1. Emilia Gómez, Maarten Grachten, Alan Hanjalic, Jordi Janer, Sergi Jorda, Carles F Julia, Cynthia Liem, Agustin Martorell, Markus Schedl, and Gerhard Widmer. 2013. Phenicx: Performances as highly enriched and interactive concert experiences. In *Proc. of SMC Sound and Music Computing Conference*. Citeseer. `http://goo.gl/soz4GS`

2. Tapio Lokki, Lauri Savioja, Riitta Väänänen, Jyri Huopaniemi, and Tapio Takala. 2002. Creating Interactive Virtual Auditory Environments. *IEEE Comput. Graph. Appl.* 22, 4 (July 2002), 49–57. DOI: `http://dx.doi.org/10.1109/MCG.2002.1016698`

3. Jieun Oh and Ge Wang. 2011. *Audience-participation techniques based on social mobile computing*. Ann Arbor, MI: Michigan Publishing, University of Michigan Library. `https://ccrma.stanford.edu/~jieun5/publications/2011-icmc-audience.pdf`