Process modeling for new media artworks

Brigitte Kerhervé · Olivier Gerbé · Paul Landon

Abstract Practices in new media art pose very interesting challenges to the multimedia research community in terms of software tools development, usage of media technologies or documentation and conservation of new media artworks. In this paper, we present the different stages in the life cycle of new media artworks and we illustrate the use of the canonical processes of media production in this context. This work is a first step towards a process modeling framework for the description and documentation of new media artworks.

1 Introduction

In their recent book “New Media Art” [11], Mark Tribe and Reena Jana describe New Media Art in terms of “projects that make use of emerging media technologies and are concerned with the cultural, political, and aesthetic possibilities of these tools”. This art movement is very active and is also evolving very rapidly. Video art for example, has expanded significantly since early explorations with the transmission and reproduction of electronic moving image and sound. Contemporary video practices today take on a multiplicity of forms [2,8]. These include high definition, large screen pieces, multi-screen, multi-channel programs, interactive and adaptive installations, and web based streaming video works.

Practices in new media art thus pose very interesting challenges to the multimedia research community. First, new media artists are very demanding users and they push pressure for integrated, flexible and easy-to-use software tools supporting the concepts they push and experiment in their artworks and installations. Second, they face and circumvent the complexity and difficulties of multimedia art creation and their practices can provide a better understanding of the usage of multimedia technologies. Third, preservation, documentation and redisplay of new media artworks are important problems curators, gallerists and collectors imperatively have to solve.

In this paper, we present the different stages in the life cycle of new media artworks and we identify the corresponding processes. We illustrate the use of the canonical processes of media production [3] in the context of new media artwork design and production, more specifically for adaptive video artworks. The rest of the paper is organised as follows. Section 2 describes our research context and approach. In Sect. 3 we present the life cycle of new media artworks and we model the different stages using the canonical processes. Section 4 concludes and presents future work.

2 Our approach

2.1 Research context

This work has been initiated in the framework of the research group: “New Forms of Narrative and Audio/Video Practice”, being part of Hexagram, the Institute for Research/Creation in Media Arts and Technologies founded by Concordia University and Université du Québec à Montréal [4]. The
artists and scientists of this group explore the relationships between video and the new technologies of producing and disseminating moving images and sounds. They research and develop new content and narrative forms of image and sound that exploit the possibilities offered by new technologies of reproduction, treatment and dissemination of video and sound.

In this context, we have conducted a collaborative research project which aimed at exploring approaches, processes and software tools required to facilitate the design, creation and experimentation of adaptive new media artworks. Adaptive and interactive artworks are artworks that can modify their behaviour in response to changes in the state of the environment or the spectator. In this project we have proposed an adaptation framework that combines semantic and physical adaptation and which is supported by an adaptation engine. The adaptation framework has been validated through the implementation of a prototype of the adaptation engine. This prototype integrates the management of various types of metadata and allows a representation of adaptation scenarios in terms of the involved media objects, the events triggering the adaptation and the actions to be performed [9,10]. The adaptive new media artwork “The Man of the Crowd” by Paul Landon served as a case study for this research project.

2.2 Our case study: the man of the crowd

The Man of the Crowd is an adaptive new media artwork produced and exhibited in 2003 and 2004 by Paul Landon, media artist and researcher in the School of Visual and Media Arts at UQAM [7]. This artwork served as the case study in the collaborative research project we conducted.

Landon explores the states of distraction and fascination the urban spectacle can inflict on the individual. “The Man of the Crowd” is an attempt at analysing and reconstructing the movements of a crowd. As the spectator enters a corridor, she sees four white screens. As she moves down the corridor, images appear on the screens. She sees the head and shoulders of a man walking past and she hears his footsteps. The same man appears on all the monitors at different intervals. The frequency of the man passing on the screens is increased as the movement of the spectators in the corridor increases.

This installation (see Fig. 1) consists in four video monitors, the selection and diffusion of video sequences are adapted to the spectators’ movements captured using a web camera. This installation has been produced as an application developed using the PureData graphical programming environment. The Pure Data application reads the spectators movements by way of the web camera and delivers compressed video and sound based on their position and movements.

2.3 Objectives and approach

From this collaborative work around the new media artwork “The Man of the Crowd”, we had the opportunity to study artistic practices and to understand the design and production processes of new media artworks. That leaded us to describe the life cycle of a new media artwork and to detail it in terms of the canonical processes of media production defined during the Dagstuhl Workshop [5]. A preliminary version of this work was presented during the ACM Multimedia 2005 workshop: Multimedia for Human Communication—From Capture to Convey [6].

While “The Man of the Crowd” was the case study of our initial research project, we also worked to enhance our approach and to extend it to support the needs of other artists involved in the research group. More specifically we worked with Chantal duPont and Mario Côté, whose practises consider online and audio artworks. Once again, we perceived the interest of using the canonical processes of media production to understand, describe and document new media artworks. We also used these canonical processes to identify common processes and stages in the life cycle of several new media artworks. Our objectives are to propose a process modeling framework for the description and documentation of new media artworks and to validate this framework through a multi-case study. Such a process modeling framework will be helpful to