

P 7 VIRTUAL FILM DIRECTION

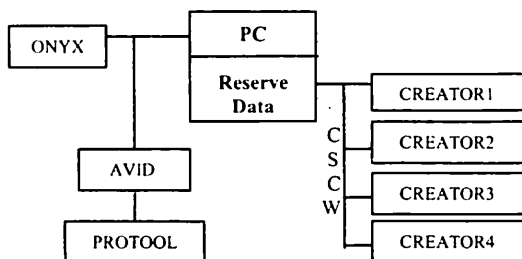
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Abstract

The traditional way of filmmaking is one of the most expensive businesses. Moreover as an art, it combines various types of aesthetical and technical skills. Virtual film direction demonstrates how to direct a film in computer through human-computer interface. The idea of film storyboard is the foundation of this research. First a film sequence needs to develop from the outline of a storyboard of a film. The movement of camera and actors virtually create the motion for the film. Finally actors' gesture and dynamic facial expressing with lip-syncing make a film believable to its audience.

Introduction

The research deals on creating a film sequence from a film script. A sequence is a series of film shots which are edited in a logical order to express a certain idea or information of a story to the viewer. In traditional filmmaking, a storyboard outlines the shots for the film sequence. In the outline, every detail of a shot is drawn and written properly. In virtual development, objects and characters data is imported through user interface for storyboard from data library. Modification also is done to achieve certain goals. Some difficulties arise for the lack of data of objects and characters' movements or facial expression. In this case, we can use the recent widespread development of Internet environment for importation of data. We should develop a network of Computer Supported Cooperative Works (CSCW) groups in this kind of research. We also can use an animation and design software to have the same motion of movie of 24 frames per second and to have an artistic look of all the elements of a sequence with proper light and color.

**Working on Storyboard**

As an example, a user can choose a sentence from of a shot in a film script; *four people are sited around a green squared table*. This sentence can be used as an input. At this stage we would need to design a program to recognize the Natural Script Language for the sentence. Then this program can ask questions to the user about every detail of characters, objects and atmosphere to create an appropriate scene. The followings are the questions the program can ask to a user:

What is the size of the room (small, medium, large)?
 What kind of lighting do you need for the room?
 What are the sizes of your characters?
 What kinds of get-ups do you need for your characters?
 What will be the facial expressions for your characters?
 Where do you like to place your characters around the table (axis and angle)?
 What's the size of the table?
 What's the height of the table?
 What's the texture of this table?
 Where will the apple be placed (the axis and angle)?
 How will be the lighting setup?

In a Windows environment, the project can be designed by using Visual C++. This object oriented language helps to create operations or functions of multiple behaviors in a single name. Some objects and character data are available in our own reserve. Windows connects our system with Internet. Light Wave - 3D is another choice for animation and modeling. We can also connect our system with ONYX for creative animation and modeling in Maya. In this way, we can develop a storyboard for the sequence.

Camera and Character Movement

Characters and camera movement can be designed in this level of virtual cinematography. The movement of a character determines the movement of a camera. From the modification of characters data and the use of animation, it could be possible to create the appropriate movement of a character. Appropriate camera movement is also achievable by establishing a relational linkage between character(s) and camera movement. The camera placement, shot composition and staging of dialogue sequences would be coded previously.

Actors Gesture and Dialogue Projection

At the time of virtual cinematography, dynamic facial expressions are always necessary. Moreover lip-syncing is very essential when actors are in dialogue projection. All of these make the acting lively and believable to viewers. For successful program designing, detailed and developed data of upper facial gesture and lip-syncing is necessary for proper modification. For an example, we have the data of the upper facial gesture and lip-syncing of an adult male with the dialogue: *I am going now*. With proper modification we can use this data for another dialogue of an adult male: *I am ok now* or *I am eating lunch*. Result can be poor if data are not perfect.

Scene Editing and Dialogue and Sound Editing

As we proceed in creating shot after shot, we can edit our shots at the same time of creating. Besides, the system can communicate to Avid system for editing in postproduction. Then we can take the output for sound editing to any kind of nonlinear sound edit system like Protocol.

Conclusion and future Work

Although virtual film direction excludes different film experts of traditional film making like cinematographer, make-up artist, set designer and also the actors, numerous objects and characters' data also essential to continue this kind of research. This research obviously needs lots of data of characters' gesture, facial expression and lip-syncing.

Moreover, if we would like to create an appropriate music of a certain situation of a scene, there should have various types of data of music for different mood and environment. It would also be interesting if we would have data of music created automatically from a scene appearance. The success of virtual film direction greatly depends on the success of data of detailing all aspects of film direction.

Reference

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