

An Easy Generation of Thriller Movie Poster from 3D Models

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I. INTRODUCTION

Movie posters give the audience a first impression of the story before they watch a movie. Needless to say, the poster plays an important role in attracting people into the cinema. In the case of thriller movies, the importance becomes clearer because the poster itself should thrill the audience. Especially, Alfred Hitchcock, known as the master of suspense, greatly influenced many movie posters until now. Though it's been a long time since his movies were released, his posters still make us shudder and shiver. In this paper, we suggest an approach to generate a Hitchcock-style movie poster from 3D models. This method could be extended to make a poster using our own faces which are easily obtained from the 3D scanner these days. Also, this paper helps filmmakers to simulate a poster from their own 3D scene.

II. POSTER GENERATION

A. Alignment of Camera's Viewing Direction

This paper focuses on the fear and agitation appeared when people watch thriller movies. The first step is detecting facial feature vertices from a given 3D model. According to MPEG-4 FBA primary expressions [1], fear expression is specified with eyebrows, eyelid and mouth. It is not easy to catch the feature vertices from a 3D model directly. Thus, we project the front face of 3D model orthogonally onto the 2D image. After mapping textures on the projected vertices, each feature-bounding polygon is detected from the texture images. Then, the nearest neighbor vertices of the polygon are selected to construct closed loops of the edges.

Facial expression of 3D model gives a different impression depending on the position of the viewer. It means that we can score the fear in terms of the camera viewpoints. There are four basic movements to be considered to decide whether the characters feel frightened: opening eyelid, raising eyebrow, squeezing eyebrow, and opening the mouth [1].

B. Vintage Shading of a 3D Model

We apply toon shading of non-photorealistic rendering (NPR) techniques to imitate the appearance of Hitchcock's movie posters. Toon shading makes 3D models appear to be flat by using less color instead of a color gradient. As a result, toon shading is overlaid with the original texture to give the object a more hand-drawn look.



Figure 1. Generated posters from 3D models using our system.

To find the primary colors, k-means clustering algorithm is used to classify all colors of the texture image into a very small representative set of colors. We select k dominant colors from each set as basic colors for toon shading. The color sequence of the representative colors is based on the lightness of color in order to enhance the plausibility. We make use of HSL color space (Hue, Saturation and Lightness) instead of RGB (Red, Green and Blue) in order to compare lightness directly.

C. Poster Synthesis

Movie poster consists of complex elements such as characters, title label, credit labels and background. A poster must be well-organized and aesthetic to appeal to the audience at a glance. We synthesize a thriller movie poster in terms of four categories: layout, color scheme, font and text. Thirty eight thriller movie posters directed by Hitchcock are analyzed to collect the properties in terms of those four categories.

REFERENCES

- [1] Friesen, E., and P. Ekman. "Facial action coding system: A technique for the measurement of facial movement." Palo Alto (1978).