

Directional texture transfer for video

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Abstract Texture transfer is a method that copies the texture of a reference image to a target image. This technique has an advantage in that various styles can be expressed according to the reference image, in a single framework. However, in this technique, it is not easy to control the effect of each style. In addition, when this technique is extended to processing video images, maintaining temporal coherence is very difficult. In this paper, we propose an algorithm that transfers the texture of a reference image to a target video while retaining the directionality of the target video. The algorithm maintains the temporal coherency of the transferred texture, and controls the style of the texture transfer.

Keywords Texture transfer · Temporal coherence · Example-based rendering · Video processing

1 Introduction

Non-photorealistic rendering (NPR) is a computer graphics technique that mimics human artistic expression. NPR has been studied since the 1990s [7], and video-based NPR was studied mainly in the 2000s. Most research studies focused on the expression of a specific style: painterly [6, 9, 15], pen and ink [13, 20], and watercolor [2]. These are stroke-based

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