

A Depth Map Reallocation Method for Improving 3D Effect

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Abstract

This paper addresses a novel method to reallocate depth map values with considering the border effect to enhance spatial feeling of stereoscopic images. The 2D plus depth (2D+D) image format is one of the most popular representations of stereoscopic images. Novel views can be synthesized from 2D+D images by state of the art depth-image-based rendering algorithms. However, protrusion parts of stereoscopic images may be blurred and cause discomfort regarding to different crosstalk properties of various 3D displays. Furthermore, as a result of the border effect, regions next to screen borders are hard to be protruded even with considerable positive disparity. This paper proposes a method to rearrange depth map values by analyzing regions near screen borders and disparity is decreased so as to offer better stereo effects. Experimental results on human factor issues show that the proposed method significantly makes stereoscopic images more attractive and more comfortable.

Keyword : 2D plus depth; multi-view; depth-map adjustment