Stereoscopic Visual Attention Guided Seam Carving for Stereoscopic Image Retargeting.

Stereoscopic image retargeting plays an important role in adaptive 3D stereoscopic displays. It aims to fit displays with various resolutions while preserving visually salient content and geometric consistency. We propose a stereoscopic image retargeting method based on stereoscopic visual attention guided seam carving. Firstly, stereoscopic saliency map is generated by combining 2D saliency and depth saliency maps, and significant energy map is generated by considering binocular disparity binocular and binocular just-noticeable-difference (BJND). Then, seam selection is applied to the left image based on stereoscopic saliency and energy maps, and seam replacement is performed for the occluded regions to prevent the geometry inconsistency. Finally, according to the matched left and right seams, the retargeted stereoscopic image is generated. In the experiments, subjective and objective analysis on three stereoscopic image databases shows that the proposed approach produces better seam carving results than the related existing methods.