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AN ENHANCEMENT METHOD FOR TARGET RECOGNITION IN VISIBLE AND NEAR
INFRARED REMOTE SENSING IMAGES**Abstract**

The target recognition method based on single source visible light remote sensing image is easily affected by the interference of light and other factors. In order to alleviate this problem, an improved multi-source remote sensing image fusion method of visible light and near-infrared is proposed in this paper, and the target recognition performance is improved based on visible light and near-infrared remote sensing image. Firstly, the saliency map combining color, brightness and orientation features of the image is calculated by the ITTI visual saliency model, and the edge image is obtained by Canny feature extraction. The improved image saliency map combining edge features is obtained by combining the saliency map with the edge image. Based on the improved image saliency map, visible images and infrared images are divided into salient regions and non-salient regions respectively. Different fusion algorithms are adopted for different regions of the image. It is directly regarded as a fusion image if the region belongs to the salient region of infrared or visible images. When the region belongs to the salient region of both infrared image and visible image, the linear weighted fusion algorithm is used. When the region belongs to the non-salient region of both infrared image and visible image, the region mutual information and local energy value of the two images are combined to determine whether the fusion result is the visible image region or the infrared image region. By using the improved multi-source remote sensing image fusion method of visible and near infrared images, the fused image is obtained which can enhance the target and suppress the background. Then, a comparative experiment of target recognition based on visible and near infrared remote sensing images is conducted on VEDAI (Vehicle Detection in Aerial Imagery) and VisDrone-DroneVehicle datasets. Finally, the experimental results show that When the structure similarity is not less than 50Key wordsImage fusion, visible image, near infrared image, remote sensing target recognition