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External Retinal Prosthesis Image Processing System Used One-Cue Saliency Map Based on DSP

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Abstract : Retinal prothesis is designed to help the blind to get some sight.It is made up of internal part and external part.In external part ,there is made up of camera, image processing, and RF transmitter.In internal part, there is RF receiver, implant chip,micro-electrode.The image got from the camera should be processed by suitable stragies to corresponds to stimulus the electrode.Nowadays, the number of the micro-electrode is hundreds and we don’t know the mechanism how the elctrode stimulus the optic nerve, an easy way to the hypothesis is that the pixel in the image is correspondence to the electrode.So it is a question how to get the important information of the image captured from the picture.There are many strategies to experimented to get the most important information as soon as possible, due to the real time system.ROI is a useful algorithem to extract the region of the interest.Our paper will explain the details of the orinciples and functions of the ROI.And based on this, we simplified the ROI algrithem,and used it in outside image prcessing DSP system of the retinal prothesis.Results show that our image processing stratiges is suitable for real-time retinal prothesis and can cut redundant information and help useful information to express in the low-size image.

Keywords : image processing, region of interest, saliency map, low-size image, useful information express, cut redundant information in image
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