基于形状描述符和孪生神经网络的纹理分割算法

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摘　要： 为提升对复杂几何变换或复杂滋扰图像的分割效果，提出了一种新型的形状描述符及纹理分割算法.在感兴趣区域内聚合图像统计信息，通过神经网络训练得到形状描述符，利用训练得到的形状描述符进行纹理分割.分别对合成图像和真实图像进行分割实验，本文算法在轮廓指标和区域指标上均优于其他算法.实验结果表明，本文算法是有效可行的，并且能够对复杂几何变换或复杂滋扰图像取得较好的分割效果.

关键词： 纹理分割，形状描述符，孪生神经网络

Texture segmentation based on shape descriptor

and siamese neural network

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Abstract： To improve the segmentation effect of complex geometric transformation or disturbing images, a novel shape descriptor and texture segmentation algorithm is proposed. Image statistics are aggregated in the region of interest, shape descriptors are trained by neural network, and texture segmentation is carried out by using the trained shape descriptors. The segmentation experiments of synthetic image and real image show that the proposed algorithm is superior to other algorithms in contour index and region index. Experimental results show that the proposed algorithm is effective and feasible, and can achieve a better segmentation effect for complex geometric transformation or disturbing images.

Key words： Texture segmentation；shape descriptors；Siameseneural networks

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