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基于小波神经网络的图像去噪算法

蔡念、胡匡祐*、李防震、苏万芳
中国科学院生物物理所

生物医学图像在成像时不可避免地受到噪声影响，因此噪声去除是生物医学图像处理的一项重要研究课题。将小波神经网络引入图像去噪领域中，通过多种技术优化网络学习过程，最终建立一种图像去噪新算法。实验结果表明，该算法在去除噪声上优于传统的中值滤波等方法，并具有较强的鲁棒性；同时能够最大限度地保护图像的细节信息，具有很好的保真度。

NOISE REMOVAL IN DIGITAL IMAGES BASED ON A WAVELET NEURAL NETWORK

Noise is inevitably involved in biomedical images when imaging. It is an important issue to remove the noise. Due to the excellent local feature and the adaptive self-learning ability, a wavelet neural network was introduced in the field of noise removal in biomedical images. Several techniques were used to optimize the learning process of the network and a novel denoising algorithm was proposed. The experimental results showed that the algorithm was superior to traditional median filtering in the field of noise removal in biomedical images. The results also indicated the robustness of the proposed approach. The proposed algorithm can preserve fine details of the images and has excellent fidelity.

关键词