

عنوان مقاله:

Speckle noise reduction in medical images using Stationary Wavelet Transform and Neural Network

محل انتشار:

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نویسندگان:

M.Saman Asadi - *Department of Computer and information technology, Qhazvin Branch, Islamic azad university, Qhazvin, iran*

S.Hamidreza Mobinipour - *Department of Computer and information technology, Qhazvin Branch, Islamic azad university, Qhazvin, iran*

خلاصه مقاله:

Ultrasound images are commonly suffering from speckle noise. In order to recognize diseases symptoms from ultrasound images it is very important to remove speckle noise. In this paper we propose a new method which is able to reduce the speckle noise properly. This method is based on stationary wavelet transform. The Stationary wavelet transform (SWT) is a wavelet transform algorithm designed to overcome the lack of translation-invariance of the discrete wavelet transform (DWT). Translation-invariance is achieved by removing the downsamplers and upsamplers in the DWT and upsampling the filter coefficients. The SWT is an inherently redundant scheme as the output of each level of SWT contains the same number of samples as the input – so for a decomposition of N levels there is a redundancy of N in the wavelet coefficients. Here, by using this transform in four steps, it is feasible to remove the noise. However, there are some points that should be taken into consideration while implying this method. The simulation results show that our method is able to reduce speckle noise in medical images better than previous methods.

کلمات کلیدی:

.Ultrasound image, Speckle noise, Stationary wavelet transform, Neural network

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