A Review on Noise Reduction of Echo Cardiographic Images based on Temporal Information

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Authors:
Archana Sharma, Swapnil Jain

Abstract

Medical imaging is inserting a significant role in diagnosis the diseases and in image guided surgery. There are varied imaging modalities for various applications giving the anatomical and physiological conditions of the patient. Noise suppression of echocardiography images may be a difficult issue for correct and effective human interpretation and computer-assisted analysis. In spite of comprehensive speckle reduction ways, up to now there are few studies of de-noising echocardiography sequences supported temporal data. During this article, a quick and correct filter supported temporal data has been projected that permits the reduction of noise in echocardiography images. The projected methodology consists of smoothing intensity variation time curves (IVTC) assessed in every picture element. By filtering high-frequency elements of every temporal signal and so substitution the smooth signals in their positions, all pixels of all frames are often reconstructed during a parallel manner. The presentation of the projected methodology is evaluated and compared with seven alternative speckle-reduction filters. Judgment of the filters is predicated on a series of computer-simulated and real clinical images, and additionally on visual assessment by specialists. The experimental results show that the
projected algorithmic rule is quick, less computationally demanding than alternative filters, and correct, additionally to preserving the edges of the images.

References

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Index Terms

Computer Science  Image Processing

Keywords
MMSE (Minimizing the Mean-Square-Error)