

## Documents

Al-Asad, J.F.

**Medical Ultrasound Image: A Pre-Processing Approach Towards Reconstruction**

(2019) *International Symposium on Advanced Electrical and Communication Technologies, ISAECT 2018 - Proceedings*, art. no. 8618769, .

**Abstract**

Almost all despeckling schemes have worked on removing speckle noise from the medical ultrasound image after reconstruction; in the final stage when the image is displayed on the screen. In this paper we use the principle component analysis approach (PCA) and Improved PCA (IPCA) by using a nonlinear soft thresholding technique to remove speckle noise from the medical ultrasound image before reconstruction. Wiener filter and NLmeans filter are used as benchmark for performance comparison with PCA and IPCA. Performance comparison is done between despeckling the image before decimation and after decimation. Despeckling the image before decimation has removed the speckle noise more efficiently than despeckling it after decimation and maintained the texture of the original image. Wiener filter and NLmeans were found less efficient than PCA or IPCA in removing speckle noise. IPCA has provided better visual and numerical results than PCA and that is mainly in terms of edge detection and peak signal to noise ratio. © 2018 IEEE.

2-s2.0-85062443415

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus