A Modified Shannon Entropy Measure for Improved Image Segmentation

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Abstract : The Shannon Entropy measure has been widely used for measuring uncertainty. However, in partial settings, the histogram is used to estimate the underlying distribution. The histogram is dependent on the number of bins used. In this paper, a modification is proposed that makes the Shannon entropy based on histogram consistent. For providing the benefits, two application are picked in medical image processing applications. The simulations are carried out to show the superiority of this modified measure for image segmentation problem. The improvement may be contributed to robustness shown to uneven background in images.

Keywords : Shannon entropy, medical image processing, image segmentation, modification
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