Abstract

Thresholding is considered as pivotal tool for image segmentation [1]. The main aim of thresholding is to divide the pixels into different groups in a logical way [2]. One of the most suitable algorithm for thresholding is Social Impact Theory Based Optimization (SITO). Social Impact theory optimization algorithm has been considered as one of the important technique to find the better optimized results as it is based on human behavior. The cross entropy function works well in case of bi-level thresholding problem. However, if there is a need of the multi-thresholding in image processing application, a global and generic objective function is desired so that each threshold could be tested for its best performance statistically [6]. The maxima of the selected threshold are optimized by using the SITO algorithm based on maxima of sum of entropy ad standard deviation. The results are compared with negative selection algorithm (NSA) which is artificial intelligence (AI) technique, maximum entropy algorithm and OTSU algorithm. The performance measures i. e. Standard Deviation, Entropy, MSE and PSNR prove the improvements of SITO based thresholding.

References
Modified Image Thresholding Algorithm using Social Impact Theory Optimization (SITO)

- Prasant Kumar Mahapatra, Mandeep Kaur, Spardha Sethi, Rishabh Thareja, Amod Kumar, Swapna Devi, "Improved thresholding based on negative selection algorithm (NSA)," Springer 2013.

Index Terms

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