A new algorithm for image thresholding based on two-dimensional Tsallis entropy

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Abstract: In image processing, image analysis usually refers to processing of images with the goal of finding objects presented in the image. One of the most efficient techniques for image segmentation is entropy-based thresholding. In this paper, we present a new thresholding technique based on two-dimensional Tsallis entropy. The two-dimensional Tsallis entropy was obtained from the two-dimensional histogram which was determined by using the gray value of the pixels and the local average gray value of the pixels, the work it was applied a generalized entropy formalism that represents a recent development in statistical mechanics. This new algorithm extends a method due to M. Portes de Albuquerque et al. (Pattern

Recognition Letters 25 (2004) 1059), and P.K. Sahoo, and G. Arora (Pattern Recognition 37 (2004) 1149). The effectiveness of the proposed method is demonstrated by using examples from the real-world and synthetic images.