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An Interval-Valued Image Based Approach for Edge Detection

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The ability to propagate the uncertainty information during image processing can be very important in different applications. Detecting edges are an important pre-processing step in image analysis. Best results of image analysis extremely depend on edge detection. Edge detectors are intended to detect and localize the boundaries or silhouettes of objects appearing in images. Up to now many edge detection methods have been developed. But it may have some weaknesses in correct detection of the scope of complications for aerial images or medical images, because of the high variation rate in these images. This paper introduces a verification framework to detect edges based on interval techniques using measuring diversity of pixel's intensity and randomness of intensity distribution within the framework of information theory.

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