

A Robust Technique for Edge Detection Using Integration of Entropy Threshold—Canny (InTEC)

ABSTRACT

Edge detection is one of the important stages in digital image processing and computer vision. In general, edge detection is a process of identifying and validating sudden discontinuities in pixel intensities for grayscale images. This paper focuses on discussing a robust technique in edge detection using integration of several well-known techniques. At first, contrast enhancement approach using contrast limited adaptive histogram equalization (CLAHE) technique was performed to increase the brightness of the images. An adaptive filtering process will be applied in order to reduce noisy elements. To achieve our aims on producing a robust technique, we synthesized Canny technique with modified entropy based method. Based on the conducted performance test, InTEC technique able to identify the edge easily even though the noise percentage increases up to 30%. The high recorded peak signal-to-noise ratio (PSNR) values showed that InTEC technique significantly robust as compared to other prominent techniques.