Multiscale Edge Detection Based on Nonsubsampled Contourlet Transform

Authors : Enqing Chen, Jianbo Wang

Abstract : It is well known that the wavelet transform provides a very effective framework for multiscale edges analysis. However, wavelets are not very effective in representing images containing distributed discontinuities such as edges. In this paper, we propose a novel multiscale edge detection method in nonsubsampled contourlet transform (NSCT) domain, which is based on the dominant multiscale, multidirection edge expression and outstanding edge location of NSCT. Through real images experiments, simulation results demonstrate that the proposed method is better than other edge detection methods based on Canny operator, wavelet and contourlet. Additionally, the proposed method also works well for noisy images.

Keywords : edge detection, NSCT, shift invariant, modulus maxima

Conference Title : ICSRD 2020 : International Conference on Scientific Research and Development

Conference Location : Chicago, United States

Conference Dates : December 12-13, 2020

1