Abstract

Quality and execution time are two important factors for evaluation of edge detection algorithms. In these algorithms, there is a trade-off between quality and execution time. Some algorithms only concentrate on quality and some of them are fast and low quality. Efficient methods try to achieve high quality in a low time. This research concentrates on improvement of gradient based edge detection that is fast method and appropriate for real-time processing. The proposed algorithm reduces execution time by removing many pixels from computations. It calculates gradient and angle class of remaining pixels in a very efficient way so that it reinforces quality and locality of edges. The results of this algorithm indicated improvement of performance in comparison to Canny and LOG algorithms.

References


An Efficient Gradient based Algorithm for Improving Performance of Image Edge Detection


Index Terms

Computer Science  
Image Processing

Keywords

Edge detection algorithm  
Gradient of image  
Angle Class of pixel  
Non-Maximum Suppression  
Post reduction of noise  
Edge detector evaluation  
Locality of edges  
Quality of edges.