Abstract

The traditional Canny edge detection method is widely used in gray image processing. However, this traditional algorithm is unable to deal with color images and the parameters in the algorithm are difficult to be determined adaptively. In this paper, an improved Canny algorithm is proposed to detect edges in color image. The proposed algorithm is composed of the following steps: quaternion weighted average filter, vector Sobel gradient computation, non-maxima suppression based on interpolation, edge detection and connection. Experimental results show that the proposed algorithm outperforms other color image edge detection methods and can be widely used in color image processing. This project we present a two dimensional edge detector which gives the edge position in an image with sub-pixel accuracy. The method presented here gives an excellent accuracy (the position bias mean is almost zero and the standard deviation is less than one tenth of a pixel) with a low computational cost and its simple since it is derivated from the well known Non-Maxima Suppression method in Matlab[1].

Index Terms

Computer Science  Image Processing

Keywords