Abstract

This paper gives an approach to recognize colors in a two-dimensional image using color thresh-holding technique in MATLAB with the help of RGB color model to detect a selected color by a user in an image. The methods involved for the detection of color in images are conversion of three dimensional RGB image into gray scale image and then subtracting the two images to get two dimensional black and white image, using median filter to filter out noisy pixels, using connected components labeling to detect connected regions in binary digital images and use of bounding box and its properties for calculating the metrics of each labeled region. Further the color of the pixels is recognized by analyzing the RGB values for each pixel present in the image. The algorithm is implemented using image processing toolbox in MATLAB. The results of this implementation can be used in security applications like spy robots, object tracking, segregation of objects based on their colors, intrusion detection.
3. Digital image processing using Matlab - Gonzalez woods & Eddins
8. The Multi-stage Approach to Grey-Scale Image Thresholding for Specific Applications, Van Solihin and C. G. Leedham
Specific Color Detection in Images using RGB Modelling in MATLAB

Index Terms

Computer Science  Image Processing

Keywords

MATLAB, Image processing toolbox, color detection, RGB image, Image segmentation, Image filtering, Bounding box.