A Review on Home Interior Designing

Pooja Vora[1], Pooja Sharma[1], Shivam Wagh[1], Prof. A. C. Taskar[2]

B.E Student, Dept. of Computer, SIEM, Savitribai Phule Pune University, Nashik, Maharashtra, India[1]

Asst. Professor, Dept. of Computer, SIEM, Savitribai Phule Pune University, Nashik, Maharashtra, India[2]

ABSTRACT: Edge Detection is a technique for image processing used to divide, analyze, segment the image depending on the brightness or dark areas in the image. The boundaries are detected by the technique to find the difference between objects in the image. Image Processing helps in optimizing the image attributes and work on the image 2D, or 3D to work with different image formats. It helps in deriving various other output images using the algorithms of edge detection i.e. image processing. This paper reviews the technique of edge detection. There are different researchers and authors who have carried out the work related to edge detection.

KEYWORDS: Edge Detection, Image Processing.

I. INTRODUCTION

Edge detection is a technique which is used to identify points in a digital image. A digital image is a numeric representation of a 2D image that is a collection of multiple small integers that are pixels, with the help of this electronic domain the image processing can be achieved. This helps the edge detection to identify the image brightness or the discontinuities in the image. The points at which image brightness changes sharply are typically organized into a set of curved line segments termed edges. Edge detection is a fundamental tool in image processing particularly used in areas like detection and extraction. As image processing allows users to manipulate and analyze data in the form of digital images.
The image analysis is the first step which includes segmentation of the image. Segmentation divides an image into parts or objects. The dividing of the image depends on the problem complexity. Sometimes it's needed to segment the object from the background to read the image correctly and to identify the actual contents of the image for this reason there are two techniques of segmentation, discontinuity detection and similarity detection.

II. RELATED WORK

LITERATURE SURVEY:
Edge is a boundary between two homogeneous regions. Edge detection refers to the process of identifying and locating sharp discontinuities in an image. Edge detection is a very important area in the field of image processing. Edge detection detects outlines of an object and boundaries between objects and the background in the image. There are large numbers of edge detection operators available, each designed to be sensitive to certain types of edges. The Quality of edge detection can be measured from several criteria. Some criteria are mathematical measurement, some of them are based on application and implementation requirements. In all five cases a quantitative evaluation of performance requires use of images where the true edges are known.

 a)   Good detection: There should be a minimum number of false edges.

 b)   Noise sensitivity: An edge detector detects and also amplifies the noise simultaneously, so using some filtering, checking and processing can be used to reduce noise sensitivity.

 c)   Good localization: The edge location must be reported as close as possible.

d) Orientation sensitivity: Orientation can be used in post processing to connect edge segments.

e) Speed and efficiency: The algorithm should be fast enough to be usable in an image processing system. An algorithm that allows recursive implementation or separately processing can greatly improve efficiency.

III. CONTEXT AWARE IN EDGE DETECTION

Edge detection is an important pre-processing step for any image processing application, object recognition and object detection. Edge detection is very helpful in case of noise free images. But in case of noisy images it is a challenging task. As an implementation of the image processing technique of edge detection the digital image can be altered, manipulated, analyzed and get a better view of the original image by performing any transformation on it. The edge detection helps in identifying boundaries or edges in the image where there is discontinuity or sharp or bright part or object detected in the digital image. This subdivision of the image is dependent of the problem. While execution the algorithm related to edge detection the image is divided and that division is then analyzed and if needed is further divided as per the problem. This helps in executing a problem on the image and extracts the information from it using the technique of image processing.

As for the proposed system the edge detection will be used in the part to detect the different edges in the room. The room is a 3D image while the edges in this digital image can be in multiple levels of the wall, or the floor, or with respect to the other furniture objects in the room.
ALGORITHM:
  i.   The image will be recognized of the room.
  ii.   The edges of the room can be identified (Distinguishing in between the floor, wall or other objects).
  iii. These edges will then be a guideline for the image to add new features on it.
  iv.   The edges will be identified using the different edge detection techniques.

IV. CONCLUSION

Literature review indicates that several works has been done in the field of Edge detection. These works includes comparison of various edge detection techniques, various image segmentation techniques, improved versions of edge detectors etc. The Fuzzy logic algorithm is adaptable to various environments. This technique uses the edge strength information derived using three masks instead of using a single mask as used in most of the edge detection techniques. Edge detection is an important pre-processing step for any image processing application, object recognition and object detection.

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