

Cascading the Images based on S-R Algorithm

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Abstract: *Image Inpainting is the art of filling in lost portions of an image using background details in a visually disingenuously smooth way. When an image fills missing region sometimes it cannot fill a coarse version of the input image at that time it first inpainted by a non-parametric patch sampling. If we compare with an existing system, it introduce blurring, resolution decimation, and corruption by noise. We are introducing new algorithm which converts the original image into low resolution image then it stores the patches into the database and then apply to an image. The input image allows reducing the computational complexity in low version of Inpainting, in our proposed algorithm image is less sensitive to noise and it works with the dominant orientations of image structures. From the low-resolution in painted image, a single-image super-resolution is applied to recover the details of missing areas.*

Keywords: Blurring, Decimation, Inpainting, Patch Sampling, Resolution

1. Introduction

Inpainting technique play an main part in broad range of application. Inpainting is the process of build or form (something) again after it has been damaged or destroyed, lost or decline parts of images and videos. The main point is to create software that can remove selected pryoion from the image and fill the mising hole. Image Inpainting is the art of filling in lost portions of an image using background details in a visually disingenuously smooth way. In the past, lot of research work has been done on this following algorithm

a) Texture synthesis:

Texture synthesis is the process of step by step procedure constructing a large numeric representation (normally binary) of a two-dimensional image from a small digital sample image by taking advantage of its structural content.

b) Diffusion Based Method :

In diffusion based method are categories into two pats: first is linear diffusion based: it is way to controlled image smoothly. Second is Non-Linear Diffusion: In diffusion based method done image inpainting image denoising is very important part. Image denoising methods is Average filtering & median filtering usually destroy the characteristics image like edge, line & texture. diffusion-based approaches which propagate linear structures or level lines (so-called isophotes) via diffusion based on partial differential equations and variational methods to be filled-in is large. It reduces noise is efficiently removed and object contours are strongly enhanced The second family of approaches concerns exemplar-based methods which sample and copy best matching texture patches from the known image reported in. Improve the search for similar patches by introducing an a priori rough estimate of the in painted values using a multi-scale approach which then results in an iterative approximation of the missing regions from coarse to fine levels. The two types of methods (diffusion- and exemplar-based) can be combined efficiently, e.g. by using structure tensors to compute the priority of the patches to be filled

2. Related Work

Texture method are not capable to restore in structural inpainting methods a. Texture has a repeated pattern which means that a missing portion cannot be restored by continuing the level lines into the gap. The texture synthesis algorithm takes sample texture from the region outside the region to be inpainted. It is repeating two dimensional patterns with some randomness. In diffusion based method used denoising method is used and also it fills the missing region but introduce the blur image and it take more computation time.

3. Proposed Methodology

In proposed system two main components are the in-painting and the super-resolution algorithms. More specifically, the following steps are performed:

- 1) A low-resolution image is first built from the original picture;
- 2) An in-painting algorithm is applied to fill-in the holes of the low-resolution picture;
- 3) The quality of the in-painted regions is improved by using a single-image SR method.

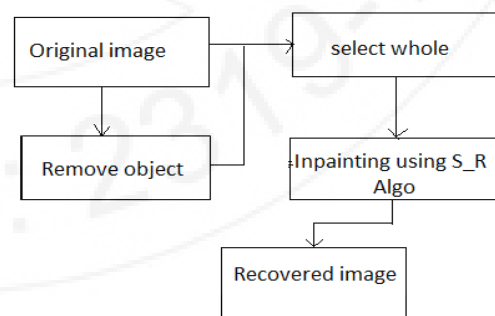


Figure 3.1: Block Diagram

4. System Design

Data Flow Diagram / Use Case Diagram / Flow Diagram: The DFD is also called as bubble chart. It is a simple graphical formalism that can be used to represent a system in

terms of the input data to the system, various processing carried out on these data, and the output data is generated by the system.

A. Use Case Diagram

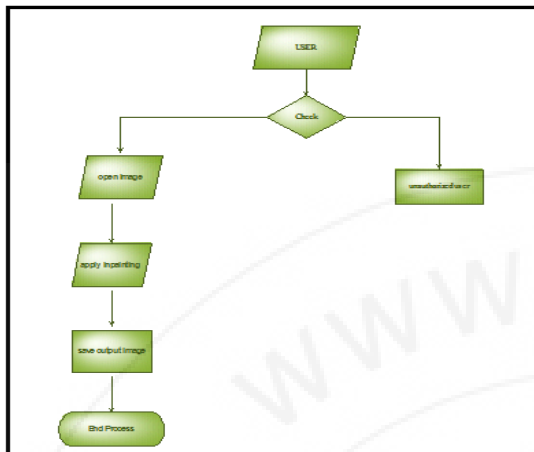


Figure 4.1: User Case Diagram

B. Class Diagram

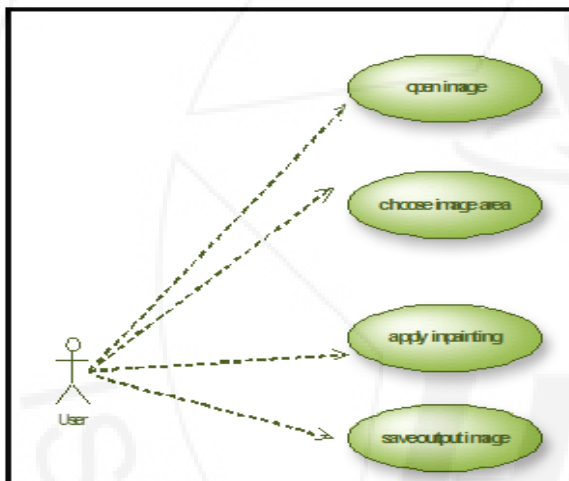


Figure 4.2: Class Diagram

B. Sequence Diagram

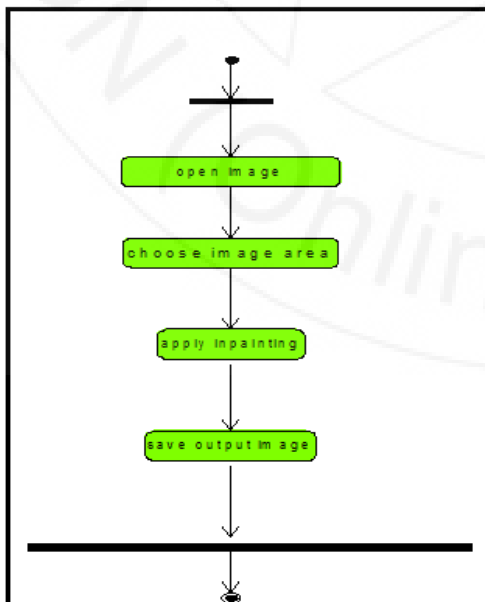


Figure 4.3: Sequence Diagram

5. Conclusion

An algorithm for image in-painting is used to repeat the basic techniques. The basic principle is to smoothly propagate information from the surrounding areas. In painted algorithm, user must select or provide the region and remaining procedure will be done by the algorithm in some minutes. The outputs of in-painted images are sharp and it doesn't affect on color or size of the image. The given example describes a wide range of applications which involves restoration of old photographs and damaged film, removal of superimposed text, removal of objects and enhancement of blurred images. The output results can be applied either as final restoration or initial point for manual restoration, which will eventually minimize the total restoration time.

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