



Plan and Implement of New Super Resolution Algorithm Using Repainting

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Abstract--- A new technology for the exemplar based repainting. It process on first step is repainting for taken image. Super resolution algorithm is benefit to gain missing region of the taken image. Advantage of this approach it is easy to low resolution images than high resolution images than high resolution images. The benefit is in two types, they are computational complexity and visual quality. Differ configurations can be done on low resolution input image is repainted for several times. Total details are benefit by using super resolution algorithm.

Keywords--- “Repainting”, “super-resolution”, “missing region”, “low resolution”, “high resolution.”

I.INTRODUCTION

Image Processing means procedure of images using mathematical operations by using any form of signal processing for which the input is an image, such as a photography or video frame; the output of image processing may be either an image or a set of characteristics or parameters related to the image. Repainting is the process of reconstructing lost or to make parts of an image. The procedure of repainting uses the background information to fill the missing or target region of image[1]. Starting repainting is used for scrape removal. The other applications include object removal, text removal and other automatic modification of images. The idea of object removal is to remove objects from digital images and fill the missing region with the information extracted from the surrounding area.

Existing methods of repainting can be categories two main classifies namely diffusion and exemplar based approaches[6]. The diffusion based approach tends to introduce some blur when the target region or area of removal to be filled is large. Exemplar based approach using the background i.e, these types sample and copy best matching texture patches from the known image neighbourhood[2][5]. In this type diffusion based

techniques effectively generate new text by sampling and copying color values from the source[2]. The technique presented here together the strength of both approaches into a single efficient algorithm. Exemplar based repainting is applied to propagating both structure and texture information.

The progress has been made in the previous years on repainting, difficulties exist when the missing region or the area of object to be removed is very large and the area of object to be removed is very large and the computational time required in general is high. These two problems are specify by considering a two-step or hierarchical approach[6] in which repainting is performed on taken image and a super resolution algorithm is used to construct a high resolution (HR) image. Super resolution (SR) imaging target to overcome the limitation of the image acquisition system to possibly ill-posed acquisition conditions to set of images that were acquired from the same image. Moving result in image processing for visual communications and image understanding, there is a large demand for producing the viewer with high-resolution image not only for producing better image but also for extracting extra information details. A HR regions in a multi-spectral remote sensing image or to assist radiologist for making diagnosis based on a medical image.

Super resolution represents to create an high resolution (HR) image from one or more low resolution (LR) images[7]. This is based on regularization frame work. Other class of super resolution methods generates an HR image from a single LR image[7]. These methods are basic to as exemplar-based SR. Super resolution correspondences between HR and LR holes are learned[6] from a group of HR-LR holes known as dictionary and then apply to a low resolution image to recover its high resolution.

Using a non-linear regularization method based on multi scale morphology for edge preserve SR reconstruction[8]. Super resolution image reconstruction as a problem and solve the inverse problem. To get better results can be occupied by combine bregman iteration[9] and morphologic regularization.

II.RELATED WORK

A. Exemplar based Repainting

Taken an input image, creating an image mask for the unwanted to be removed. The size of the template window must be specify. Every pixel maintains a color value and confidence value. The holes in the filling region are taken a temporary priority value. It consists of three steps:

1. Filling order computation
2. Texture
3. Updating confidence values

Filling order computation: To calculate the priority of holes in the region. The priority of a holes is calculated by using confidence and data terms.

Texture: The priorities for each hole in the filling region are compute. The holes with highest priority is found and it is filled with the take image.

Updating confidence values: After filling the holes with new pixels rates.

The above three steps are repeated in an alter manner until the destination region is filled from source region.

B. Texture synthesis based repainting

Texture synthesis based repainting are old technology of image repainting. Technologies are used to complete the filling holes of an image by checking the neighbour pixel of damaged pixel. These algorithms synthesize the new pixel from an starting seed. The old technology of repainting uses these methods to fill up the missing hole by comparing the pixels of the damaged area. The important goal of texture synthesis based repainting is to give result of texture patterns, which is check to a given sample pattern, in a such way that reproducing the final result of an image.

C. Projection onto convex sets

It is based on a linear model the relation of HR and LR images, a price function is taken and the HR image is produced. POCS technology has many uses like simplicity; it can be apply to any smooth movement, and can easy to gather in the prior information, so this technique is widely used. But it is strict to the accuracy of movement estimate[8]. To improve the stability and performance of the algorithm, the relaxation operator will be used to reproduce ordinary projector operator, at the same position it is not contribute to the resumption of the edge.

III.ALGORITHM OVERVIEW

These procedure of repainting is major divided into two steps. The first step is a patch sampling technique known as exemplar based repainting. And second step is a hole sampling technique known as texture synthesis repainting. It follows three steps:

1. A low resolution image is construct from taken image.
2. An exemplar based repainting technique is apply to fill the region.
3. Super resolution algorithm is apply to the taken image.

IV.SUPER RESOLUTION ALGORITHM

The low resolution of repainted image, then super resolution algorithm is to apply. Super resolution algorithm is use to reconstruct the image which effect from originally. The problems [9][10] is to identity a holes of resolution. Super resolution algorithm classified into six steps. They are:

1. Dictionary building: It consists of correspondences between low and high resolution image patches. The high resolution to be validate, completely compare of known pixels. The validate holes are expand from the valid parts of an image.
2. Filling order of the HR(high resolution) picture: The filling procedures starts with the patch having the high priority which is compare of complete and incomplete parts of an image.
3. The LR(low resolution) patch correspondence to the HR hole have the high priority: The valid neighbour in the repainted image of low resolution is to selected. This selected process can be applied at dictionary and particular validates of previous pixels.
4. Weights are gather by using an non-local means technique to work straight combination of previous pixels.
5. A HR is last deduced by using a straight combination of HR holes.
6. Stitching: The HR patches is then gather into the missing holes.

V.CONCLUION AND FUTURE ENHANCEMENT

- A new technology for unwanted removal by using repainting has been valid implemented. Object removal is taken in a manner by gathering repainting and super resolution.
- To test another SR techniques to gather most robustness to the method. The major point is improve the visual relevance.

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