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"Filtering and Enhancing Images Using Security Algorithms"

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Abstract – This paper presents an analytical performance prediction and In painting of images that can be used to predict the execution time, speedup, scalability and similar performance metrics of a large set of image processing operations running on a p-processor parallel system. The representation which requires only a few parameters obtainable on a minimal system can help in the systematic design, evaluation and performance tuning of parallel image processing systems. Using the representation one can reason about the performance of a parallel image processing system prior to implementation. The technique can also support programmers in detecting critical parts of an implementation and system designers in predicting hardware performance and the effect of hardware parameter changes on performance. Inpainting is the technique of filling in holes in an image to preserve its overall continuity

Keywords: Image processing, performance, filtering, enhance

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1. INTRODUCTION

Image processing has both theory and methods. A few of the enhancement methods are global in that all of the input image pixels are used in some way in creating the output image. The two most important concepts presented are those of

(1) Matching an image neighborhood with a pattern or mask (correlation)

(2) Convolution, a single method that can implement many useful filtering operations.

Image needs Improvement

- An old photo has a long bright scratch, but is otherwise ne. The photo can be digitized and the scratch removed filtering operations.

- A paper document needs to be scanned and converted into a text file A paper document needs to be scanned and converted into a text file from the background and dropouts in the characters need to be filled.

2. GREY LEVEL MAPPING

It is common to enhance images by changing the intensity values of pixels. Most software tools for image processing have several options for changing the appearance of an image by transforming the pixels via a single function that maps an input grey value into a new output value. It is easy to extend this so that a user can indicate several different image regions and apply a separate mapping function to each. Remapping the grey values is often called stretching because it is common to stretch the grey values of an image that is too dark onto the full set of grey values available. a picture whose intensity values are stretched according to four different mapping functions. The result of applying an ad hoc function which was designed by the user of an interactive enhancement tool. The user defines the grey level mapping function gout = f (gin) using the computer mouse: typically the image tool it's a smooth spline through points chosen by the user. It shows remapping using the function f (x) = x1=: this function nonlinearly boosts or reduces intensities according to whether > 1 or <1.

A contrast stretching operator is a point operator that uses a piecewise smooth function f (In[x; y]) of the input grey level to enhance important details of the image.

3. IMAGE INPAINTING TECHNIQUES-

In real world, many people need a system to recover the damaged photographs, artwork, designs, drawings etc. Damage may be due to various reasons like scratches, overlaid text or graphics, scaled image etc. Traditionally, inpainting has been done by professional artists. However, we could not

expect the accuracy and quality if it was done by human and time-consuming process. Image inpainting is an important element in image restoration study. It makes use of the information not lost of the image to fill the lost or damaged part according to certain rules, so that after the inpainting, the images are close to mathematical point of view, it is to repair image in the regions of blank area in accordance with the information around them. Digital repair technology was introduced earliest by Bertalmio [Bertalmio et al. (2000)].

3.1 Image inpainting algorithms are as –

- Object removal by exemplar based inpainting method -

The algorithm is based on an isophote-driven image sampling process. The exemplar-based approaches perform well for two-dimensional textures and for propagating extended linear image structures[Criminisi et al. (2003)].

- Poison Equation method
- 8-pixel neighborhood fast sweeping method.
- 2e-Based inpainting method

Edge extraction is first performed on the original image. Then, according to exemplar selection, some blocks will be removed and the others will be encoded [liu et al. 2007Image coding scheme].

4. ON-LINE ANALYTICAL PROCESSING

The progress of data exchange in the electronic way increases the requirement of data security. Since data security needs more resources to access stored the information this leads to new mechanism and algorithm. Security Encryption Algorithm can be used for On-Line Analytical Processing data cube data cube provided itself is a technique to find the edges for business concern to any system. These edges are the most important data for any business system. The proposed technique is based on the logarithmic properties and power functions. Through these techniques after encryption we send only mathematical data for electronic communication. Only mathematical data is used in E-communication, which provides the strong encryption key to hide the information.

Growth of E-communication, security concern is most important for the users. Cryptographic techniques provide the security for the data in communication or air in the signal form, from the hacker or tracker. Increasing the use of E communication data may be financial concern or such typed data which need more securely than (we can say) the man means such type of data which has the edges of business concern needs the security. To provide the security for data, cryptographic techniques play important role to make such techniques. In the continuation for providing the security some new cipher techniques are required. The goal is to make the data secure from unauthorized access [Nidhi Singhal].

CONCLUSION -

We apply algorithm to damaged frames in old films. We found that the inpainted images are visually pleasant and computational efficiency is improved in Successive Elimination Method. Exemplar Method works well for large objects. For single dimensions like line, Arc then Poisson method is useful.

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