Application of GRNN Neural Network in Non-Texture Image Inpainting and Restoration

ABSTRACT

Inspired by the connectivity principle of human visual perception, a new inpainting approach based on GRNN neural network is proposed in this paper. The missing regions in this new technique are determined by performing regression analysis on the image data. The missing regions are first separated and sorted according to their size. Then the algorithm proceeds with applying a GRNN network to each one in order to repair their damaged pixels. Simplicity and efficiency are the main advantages of the proposed approach. The performance of the proposed approach is evaluated in three application contexts: text removal, scratch removal, and noise removal. Where possible, we used objective measures (e.g., PSNR) to evaluate the visual quality of the inpainted images.
EXISTING SYSTEM:

Image inpainting is the technique of restoring and repairing lost parts of an image by using the information of their surrounding areas. The missing region in diffusion-based approaches is filled by diffusing the information from the known region into the missing region at pixel level. The information is propagated smoothly from the boundary toward the interior of the missing region along the direction of the isophote lines (lines of equal gray values) hitting the boundary. In the exemplar-based scheme, the propagation of information is carried out through a copy-and-paste texture synthesis procedure at patch level. The diffusion-based algorithms are well founded on theory of partial differential equation (PDE) and variational formulation.
PROPOSED SYSTEM:

In this paper, we present a method to fill-in the missing or damaged areas of images by using GRNN network. The missing regions are first separated and sorted according to their size. Then the algorithm proceeds with applying a GRNN network to each one in order to repair their damaged pixels. The general regression neural network (GRNN) is a variation of radial basis neural networks which is designed for function approximation and regression. It is established based on a pass learning algorithm and does not require to learn via the error back-propagation procedure of the training data.
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SYSTEM REQUIREMENTS

HARDWARE REQUIREMENTS:

- Processor - Pentium-IV
- Speed - 1.1 Ghz
- RAM - 256 MB(min)
- Hard Disk - 20 GB
- Key Board - Standard Windows Keyboard
- Mouse - Two or Three Button Mouse
- Monitor - SVGA

SOFTWARE REQUIREMENTS:

- 7 Years of Excellence in IEEE Project development for universities across INDIA, USA, UK, AUSTRALIA, and SWEDEN.
- Expert developers in JAVA, DOT NET, ANDROID, PHP, MATLAB, NS2, NS3, VLSI, CLOUD SIM, TANNER, MICROWIND, EMBEDDED, ROBOTICS, MECHANICAL, MECHATRONICS, WIRELESS NETWORKS, OPNET, OMNET
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- Tool - MATLAB R2012
- Operating system -Windows Xp, 7

REFERENCES


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