

PROJECT REPORT

ON

**Inpainting and Character Recognition for the
Preservation of Heritage Images**

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ABSTRACT

Most of the Murals (wall paintings) available at heritage centers of India are in damaged/near damaged state. This is due to the weathering (natural impact) on the paintings, direct or indirect actions on the heritage paintings and negligence. It's now our responsibility to preserve those paintings for the next generation. Inpainting of the damaged regions on the paintings manually may lead to full destruction of the paintings; hence, one can adopt the digital Inpainting. Here, we collect the damaged paintings from the various heritage centers as digital images. One may collect those images digitally without affecting them in any manner. After digital restoration by Inpainting, one can preserve the damage free images for our future generation digitally. The goal of this project is to first enhance the given heritage image and then restore it by Inpainting so that a damage free heritage image is obtained as output. Also this project focuses on recognition of characters in the inpainted image.

Handwritten character recognition is always a frontier area of research in the field of pattern recognition and image processing. There is a great demand to extract the contents in manuscript which intern helps to study about our history, culture and heritage. Handwritten character recognition mainly uses image processing approaches for the analysis of the manuscripts.

The image containing textual information is obtained from inpainting as a first step and two stages of image segmentation are applied. Second, having a data region to work with the alphanumeric characters need to be extracted from the background so as to deliver them for recognition stage. The task of segmenting alphanumeric symbols from the each line of script can be accomplished using connected component analysis. For character recognition by direct correlation method and feature extraction technique like K L Transform (Hotelling Transform). Artificial Neural Networks based approach can also be used for recognition purpose.