

Abstract

In this minor project we have studied various approaches for the enhancement of degraded document image binarization. Out of these various methods we have implemented four different methods in MATLAB. First method is Niblack's method, where threshold value is calculated adaptively by considering the local mean and local standard deviation, computed in a small neighborhood of each pixel. Second method is Adaptive Document Image Binarization which is a modified version of Niblack's method for text binarization. The threshold value is determined adaptively, based on the local mean, local standard deviation and dynamic range of standard deviation. Third method is Adaptive Degraded Document Image Binarization which has several steps: noise removing using Weiner filter, a rough estimation of foreground regions, interpolation of the neighborhood background pixels for background surface calculation, binarization by calculating the threshold value using background surface and the original filtered image and finally a post processing step for improving the text region. The last method we have studied is Adaptive Document Image Binarization, where Gaussian filter is applied as a pre-processing step and the result is compared to the other methods.