Abstract

Text either embedded or superimposed within video frames is very useful for describing the contents of the frames, as it enables both keyword and free-text based search, automatic video logging, and video cataloging. Low contrast, noise and poor quality are the main problems of text extraction in video images. This article explores a novel approach for text extraction from video frames, which can handle complex image backgrounds with different font sizes, font styles, and font appearances such as normal and noisy video. The pre processing is done to de-noise the images through wavelet based approach by removing noise in the frequency field and reducing by the soft-threshold method. Then, the enhanced image is obtained through the inverse wavelet transform. The Morphological operators are applied to sharpen the image for clear edges and to detect the connected components accurately. Lastly, features are extracted and fed into an artificial neural network to classify the text pixel from that of the background of the image. A quantitative measure of comparison and analysis is provided by the different parameters with different noises.
Analysis of an Automatic Text Content Extraction Approach in Noisy Video Images


- Donoho, D. L "Wavelet Shrinkage and W. V. D. : A 10-minute Tour" (David L. Donoho's website)

Index Terms

Computer Science

Artificial Intelligence
Keywords

Morphological Operators  Neural Network  Text Extraction  Wavelet