

RETINAL BLOOD VESSEL SEGMENTATION AND DIABETIC RETINOPATHY DETECTION

Diabetic retinopathy (DR) that affects the blood vessels of the human retina is considered to be the most serious complication prevalent among diabetic patients . If detected successfully at an early stage the ophthalmologist would be able to treat the patients by advanced laser treatment to prevent total blindness. The project proposes a technique based on morphological image processing and tests are fuzzy logic to detect hard exudates from DR retinal images. At the initial stage the exudates are identified using mathematical morphology that includes elimination of the disc. Subsequently hard exudates are extracted using an adaptive fuzzy logic algorithm that uses values in the RGB color space of retinal image to form fuzzy sets and membership functions . The fuzzy output for all the pixels in every exudates is calculated for a given input set corresponding to red , green and blue channels of a pixel in an exudates .