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(57) Abstract :
Diabetic Retinopathy is one of the prime causes for the blindness among the working people. The regular dilated eye examinations are effective for the early finding of the symptoms and to control the retinopathy among the people with diabetes. The Early Treatment Diabetic Retinopathy Study could reduce the chances for the occurrence of retinal detachments and vision loss. Diabetic Retinopathy causes damages to the tiny blood vessels in the retina. The macula is a minute part of the retina which lies at the back of the eye. The central part of the macula is called fovea, which provides the peripheral vision. Retinopathy can affect the central portion of the macula by blocking light rays into the retina. To detect the Diabetic Retinopathy, the blood vessels are extracted from the pre-processed retinal image. The blood vessel maps are formed by means of discovering the seed points. The seed points will connect all the bright pixels which will make the vessel map. During the vessel map construction the faded blood vessels are not connected by the seed point. The shortest path of the connected seed points may mislead the vessel map within the optic disk. This process finally produces the false positive results during the retinal vessel segmentation. The proposed unsupervised method could reduce the probability of error caused by the depigmentation and to avoid the false positive results caused by the seed points of the vessel map into the optic disk. The Adaptive Resonance Theory could enable the system to classify the segmented blood vessels for grading the different level of Diabetic Retinopathy.

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