Abstract

An efficient detection of Optic disc in colour retinal images is the fundamental step in an automated retinal image analysis system. This paper presents a new approach for the automatic localization and accurate boundary detection of the optic disc. Iterative thresholding method followed by connected component analysis is employed to locate the approximate center of the optic disc. Then geometric model based implicit active contour model is applied to find the exact boundary of the optic disc. The method is evaluated against a carefully selected database of 148 retinal images and compared with the human expert. The optic disc is localized with an accuracy of 99.3%. The sensitivity and specificity of boundary detection achieved in terms of Mean±SD are 90.67±5 and 94.06±5 respectively.

Reference

Automatic Localization and Boundary Detection of Optic Disc Using Implicit Active Contours


Index Terms

Computer Science

Bio-Informatics
Keywords

Optic disc segmentation

Iterative thresholding

Geometric active contours