

SEGMENTATION OF OPTIC NERVE HEAD USING MODIFIED ACTIVE CONTOURS (MAC)

**M. CAROLINE VIOLA STELLA MARY, B. JAINUDHIN SUDAR MARRI
AND ELIJAH BLESSING**

Abstract

Glaucoma is one of the leading causes of untreatable blindness worldwide, is more likely to occur in persons of African or Asian descends as compared to Caucasians. The pressure causes the blood vessels and retinal nerves to atrophy and leads to an eventual loss of vision. Glaucoma is irreversible, so early detection of glaucoma is important because it can minimize damage and allow for prompt and adequate treatment in avoiding blindness. The segmentation and evaluation of the optic nerve head (ONH) plays a significant role in the diagnosis of glaucoma. Reliable and efficient optic disc localization and segmentation are important tasks in automated retinal screening. This paper reviews segmentation approaches using active contours (snakes) for locating and detecting the ONH in terms of the representation of the contours and the energy formulation used. We proposed an algorithm that is coupled with the modified energy terms and the incorporation of the energy minimization procedure. The proposed approach can greatly affect the performance of active contour models in medical image segmentation.

Keyword : Glaucoma, Active Contours, Optic Nerve Head, Region of Interest