
A dense sub-graph-based approach for automatic detection of optic disc

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Abstract: Glaucomas are a group of eye disorders characterised by the degeneration of the optic nerve, predominantly due to elevated intraocular pressure. Such degradation can culminate in irreversible vision loss. A significant challenge in the study and treatment of glaucomas is the accurate localisation of the optic disc, a crucial anatomical landmark associated with disease progression. This research aims to present an advanced graph-based method for the automatic identification of the optic disc's exact location, addressing the existing challenges in conventional techniques. Leveraging the K-dense sub-graph approach, our method offers a novel perspective on optic disc localisation. It involves the interpretation of intricate patterns in retinal images to pinpoint the affected optic disc area. When evaluated on recognised databases like DRIVE, Dristi-GS1, and STARE, our model exhibited an outstanding accuracy rate of 93% in optic disc localisation. This work contributes an innovative and efficient method to the field of ophthalmological research.