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The region of interest localization for glaucoma analysis from retinal fundus image using deep learning

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Highlights

- Retinal fundus image analysis without manual intervention has been rising as an imperative analytical approach for early detection of eye-related diseases such as glaucoma and diabetic retinopathy
- ROI detection as a solitary regression predicament, from image pixel values to ROI coordinates including class probabilities
- A Convolution Neural Network (CNN) has trained on full images to predict bounding boxes along with their analogous probabilities and confidence scores
- The following projected method accomplish an accuracy of 99.05% and 98.78% on the Kaggle and MESSIDOR test sets for ROI detection
- Proposed methodology indicates that proposed network is able to perceive ROI in fundus images in 0.0045s at 25ms of latency, which is even better than real-time and too using no handcrafted features
- Proposed technique has better diagnosis of eye diseases in the coming future in a faster and a much more reliable way

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