

Automatic Diagnosis of Glaucoma with Retinal Fundus Images

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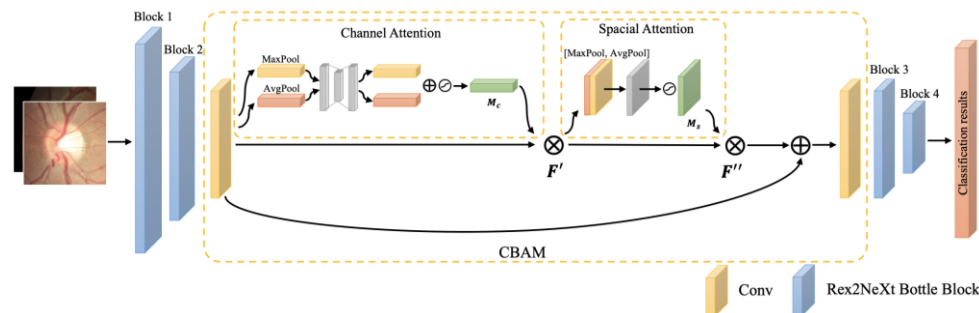
Introduction and Tasks

Glaucoma is a chronic neuro-degenerative disease and it is rated as the leading cause of irreversible blindness.

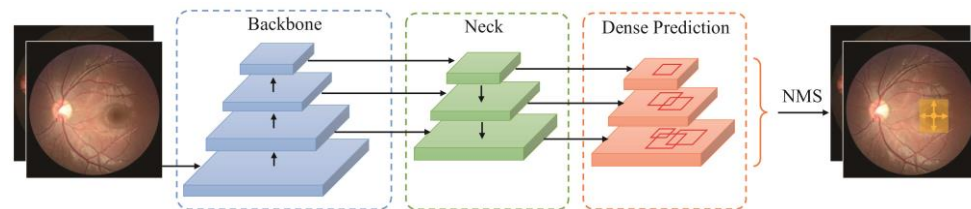
This challenge evaluates the performance of the algorithms for:

- (1) glaucoma classification
- (2) optic disc/cup segmentation
- (3) fovea localization

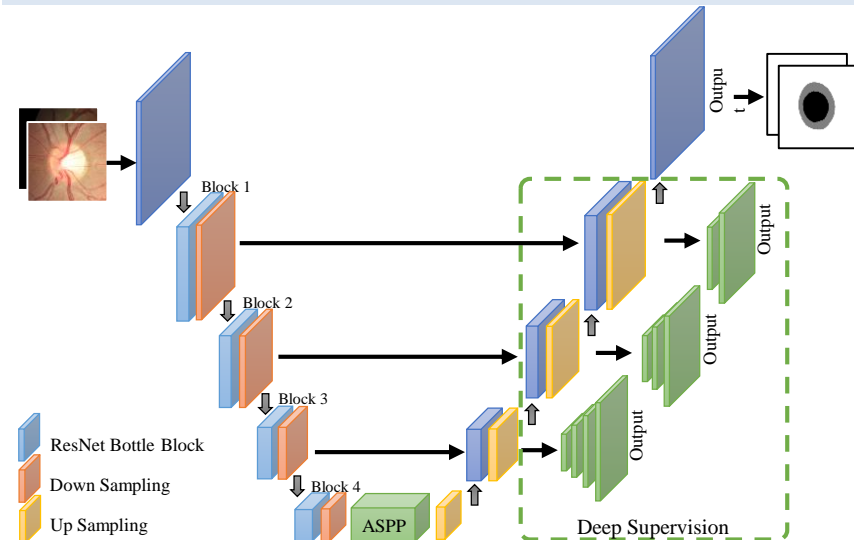
Classification of Clinical Glaucoma



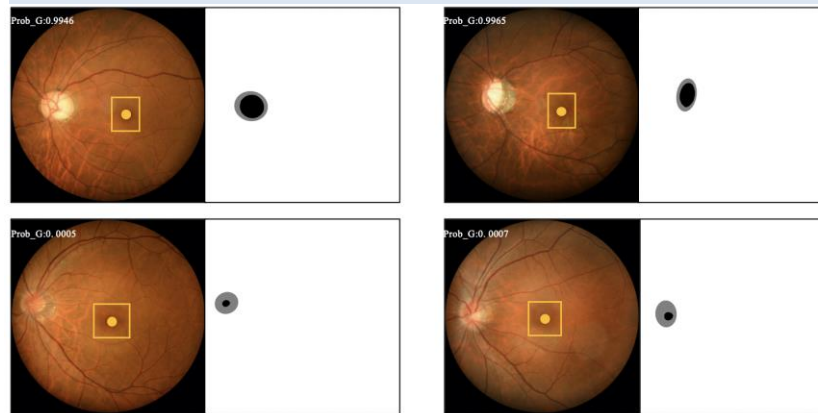
Localization of Fovea



Segmentation of Optic Disc and Cup



Visualization of Results



Conclusion

- In this study, we have developed three efficient end-to-end deep learning based frameworks for the glaucoma classification, cup/disc segmentation and fovea detection tasks, respectively.
- A strong backbone can effectively improve the model performance, for both classification and segmentation task.
- Data augmentations are applied both during training and test time. Experiments illustrate that the random crop/flip/rotation/scale in test time can significantly improve the model performance, for all the three tasks.