

Multi-model Ensemble for Robust Glaucoma Screening

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Abstract

Deep learning for glaucoma screening faces many unique challenges. A major challenge is the robustness of trained models. Here, we train multiple models with different architectures to improve the robustness for prediction. We split the data set into 5 folds and train models using different architectures. Afterwards, we select 12 different architectures. We select 2 to 4 models per fold based on validation accuracy. The 12 model architectures selected are: seresnet101, efficientnet3, efficientnet6, efficientnet5, efficientnet4, densenet201, efficientnet7, efficientnet2, inceptionresnetv2, efficientnet1, seresnext101, senet154. For the implementations we used the library called "classification_models"(Yakubovskiy, 2019). We apply cropping and pre-processing methods(Rathachat, 2019) methods to prepare the image. We applied our method on the EyePACS data set(de Vente et al., 2021).

Keywords: Deep learning, Robustness, Ensemble, Glaucoma screening

1. Conclusion

We have introduced an multi-architecture ensemble for robust glaucoma screening using color fundus photography images.

References

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