

Abstract

Glaucoma is a condition in which the optic nerve that connects the eye to the brain becomes damaged. Glaucoma can cause vision loss if not diagnosed and treated as soon as possible. One of the methods involved in diagnosing glaucoma is to calculate the ratio between the optic disc and cup on the fundus image of the eye. Calculating ratio between the disc and cup in the eye fundus image, a segmentation process is needed on the eye fundus image to be able segment the disc and cup parts. Nowadays the segmentation task can be performed using modern computer vision algorithms. Transformer itself has become one of the state arts models that are often applied on case studies that use deep learning because the performance is proven to match the Convolutional Neural Networks (CNN). This final project will discuss the implementation of transformers in case study of disc and cup segmentation on eye fundus

Images using the Segmentation Transformers (SETR) method with REFUGE and DRISHTI-GS1 datasets. The results of the dice coefficients score using Cross Dataset Evaluation managed to to get score 86 percent for the disc section and 78 percent for the cup section.

Keywords: Glaucoma, Disc, Cup, Segmentation, Segmentation Transformers, Transformers.