

DIABETIC RETINOPATHY PREDICTION USING DEEP LEARNING

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Abstract

(“Diabetic Retinopathy - Illnesses & Conditions | NHS Inform,” n.d.)

I. Introduction

1.1 Background of the project

II. Literature Review

This is reference using bibTex (Abràmoff et al. 2010)

III. Methodology

a. Dataset

For this research project I’m using dataset available at Kaggle(“Diabetic Retinopathy Detection,” n.d.). This Retinal images were provided by EyePACS. The dataset containing large set of high-resolution retina images taken under a variety of imaging conditions. For each image, a left and right field is provided. Images are identified by a image id and either the left or right eye (for example, 1 left.jpeg represents the patient number 1’s left eye).

Table 1: (“Diabetic Retinopathy - Stages” 2017)

DR classes	Level	Description
No DR	0	Healthy Retina (Normal)
Mild	1	Retina with tiny bulges (microaneurysms)
Moderate	2	Retina with microaneurysms, higher risk of developing vision problems in the future
Severe	3	Retina with severe and widespread microaneurysms, including bleeding into the retina
Proliferative	4	New blood vessels and scar tissue have formed on your retina, which can cause significant bleeding and lead to retinal detachment

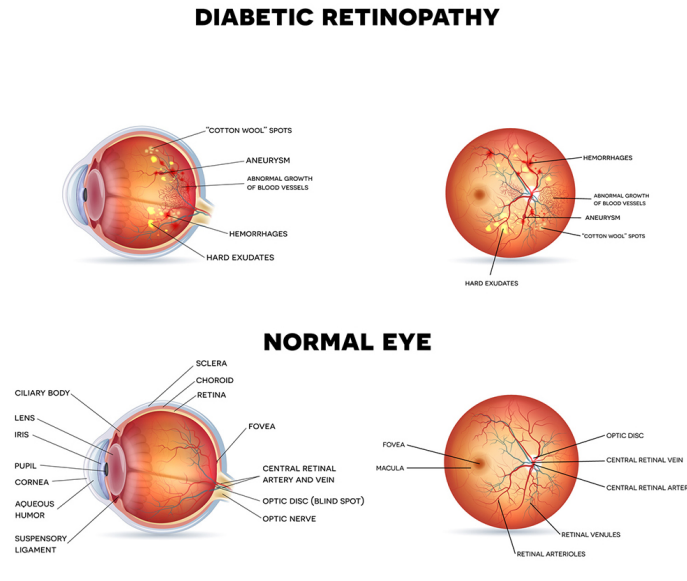


Figure 1: Normal Retina Vs Diabetic Retinopathy Retina (“Diabetic Retinopathy Vs Normal,” n.d.)

b. Data pre-processing

IV. Requirements

V. Analysis

6. Design

7. Implementation

8. Conclusion

Bibliography and References

- Abràmoff, Michael D, Joseph M Reinhardt, Stephen R Russell, James C Folk, Vinit B Mahajan, Meindert Niemeijer, and Gwénolé Quellec. 2010. “Automated Early Detection of Diabetic Retinopathy.” *Ophthalmology* 117 (6): 1147–54.
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