



FINAL YEAR PROJECT REPORT

AUTOMATIC DETECTION OF DIABETIC RETINOPATHY

**In fulfillment of the requirement
For degree of
BS (COMPUTER SCIENCES)**

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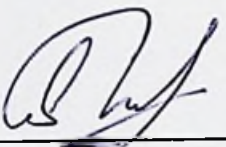
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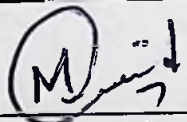
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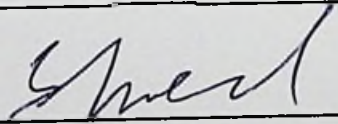
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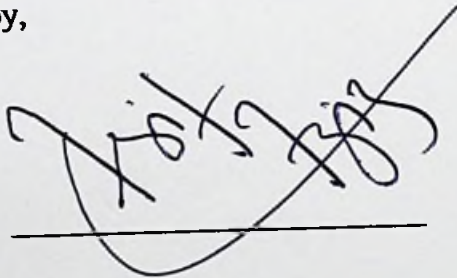
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AUTOMATIC DETECTION OF DR

ABSTRACT

Diabetic retinopathy (DR) is the leading reasons for people losing their sight across the world, particularly for those suffering from diabetes. Traditional diagnosis processes are slow and rely heavily on human interaction which can lead to errors. Advances in technology have made it possible to develop systems that automate processes, much like the one this project aims to create. Through great research in neuroimaging data processing, CNNs (Convolutional Neural Networks) can now scan retinal images and categorize the extent of DR damage [4].

This project will first integrate both AI image Processing and deep learning techniques to achieve maximum accuracy when developing algorithms. After refining and testing them extensively, Such evaluation with performance indicators will be used for the final model as accuracy, sensitivity, specificity, and many more, by taking advantage of the vast repositories available online. Some of the datasets provided online include the EyePACS database on Kaggle and Messidor [2].

In the most effective and optimal use of this DR detection project, less populated regions lacking ophthalmologists will have improved accuracy of diabetic patient treatment prior to them reaching a stage needing eyesight surgery. With this non-invasive system, patients will be able to receive timely treatment, greatly reducing the risk of blindness. On a larger scope, abundant possibilities for deeper research will be provided.

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