Effectiveness of Machine Learning Techniques for Macula Edema Detection

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Abstract

Macula Edema is an abnormality in the retina seen in patients with prolonged diabetes. If left untreated, it can cause vision loss. Macula Edema is characterized by swelling of macula or proximity of surrogate exudates to the fovea. Ophthalmologists use subjective approach to diagnose Macula Edema and normally perform pupil dilation which causes inconvenience to the patients. Moreover this procedure is time consuming and laborious. Instead of using this conventional method based on surrogates which are exudates, the paper has concentrated on the exclusive features that represent macula swelling. A total of 23 such features are extracted.

Support Vector Machine and Random Forest (RF) classifiers are used for detection of Macula Edema for the chosen database. It was found that the RF algorithm performed better with an accuracy of 80.95 % in comparison with SVM at 71.43 %.

References

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**Index Terms**

Computer Science  
Artificial Intelligence

**Keywords**

Macula Edema, Support Vector Machine, Random Forest Classifier