

## Autogenous Diabetic Retinopathy Censor for Ophthalmologists - AKSHI

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**Abstract :** The Diabetic Retinopathy (DR) is a rapidly growing interrogation around the world which can be annotated by abortive metabolism of glucose that causes long-term infection in human retina. This is one of the preliminary reason of visual impairment and blindness of adults. Information on retinal pathological mutation can be recognized using ocular fundus images. In this research, we are mainly focused on resurrecting an automated diagnosis system to detect DR anomalies such as severity level classification of DR patient (Non-proliferative Diabetic Retinopathy approach) and vessel tortuosity measurement of untwisted vessels to assessment of vessel anomalies (Proliferative Diabetic Retinopathy approach). Severity classification method is obtained better results according to the precision, recall, F-measure and accuracy (exceeds 94%) in all formats of cross validation. In ROC (Receiver Operating Characteristic) curves also visualized the higher AUC (Area Under Curve) percentage (exceeds 95%). User level evaluation of severity capturing is obtained higher accuracy (85%) result and fairly better values for each evaluation measurements. Untwisted vessel detection for tortuosity measurement also carried out the good results with respect to the sensitivity (85%), specificity (89%) and accuracy (87%).

**Keywords :** fundus image, exudates, microaneurisms, hemorrhages, tortuosity, diabetic retinopathy, optic disc, fovea

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