

## **268. DETECTING EARLY STAGE DIABETES MELLITUS WITH ITS GLUCOSE LEVEL USING 3 FEATURES OF THE TONGUE**

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Diabetes Mellitus is a fast growing fatal disease in the present world. Complications of this disease could lead to diabetes retinopathy (blindness) which is a huge burden on hospitals and the patients on time and financial aspects. Teenagers and adults are very prone to this disease and if not treated or consulted with could be fatal. The traditional way of detecting diabetes is to take a blood test for glucose levels which proved accuracy but was slightly painful as it is invasive. In this paper, we introduce a non-invasive method of diagnosing the presence of diabetes mellitus in a human by extracting the tongue colour, examining the tongue texture and tongue geometry features using SVM (Support Vector Machine) and Edge Detection Algorithm. DM affected patient's glucose level is also examined as it is the vital criteria for medication. Performance analysis is performed to achieve an accuracy of 85%

Key words: Diabetes Mellitus, Diabetes Retinopathy, Edge Detection Algorithm, SVM (Support Vector Machine) classifier, Tongue colour, Tongue texture features and Tongue Geometry features

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