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Early Diabetes Prediction System for Sri Lankans using Machine Learning and Retinopathy Image Detection

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ABSTRACT

Diabetics are a main problem that people face nowadays. In Sri Lanka, diabetics have been widely spreading among adults and the young generation. And there are diabetic types called normal diabetics and diabetic retinopathy. The diabetic can get worse, and it can have many side effects and health issues when treatments are late. And there is not any existing system for Sri Lankans to predict their diabetic health level before it gets worse. So, it is very important to have such a system for Sri Lankans to get an idea about their diabetic health status.

For the solution to this problem, an early retinopathy and diabetic status prediction system was implemented using a Sri Lankan dataset collected from the Ragama National Hospital. For retinopathy image detection, a Kaggle dataset was used. This prediction system will help people to predict their retinopathy and diabetic status early with high accuracy.

The system's current implementation gives 94% accuracy in diabetic prediction using machine learning models. Random forest model is used to get this accuracy level. This system was trained using nearly 4000 records and 12 attributes. So, the accuracy level is very high compared to others.

Keywords – Diabetic prediction, Machine learning, Diabetic retinopathy, Image processing

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