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A Blindness Avoid (Diabetic) Retinopathy Detection

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Abstract: *The increasing volume of job applications poses a challenge for Diabetic Retinopathy (DR) is one of the leading causes of preventable blindness in the working-age diabetic population in India and across the world. It may lead to permanent blindness if not detected in the early stages. The International Diabetes Federation estimated that Diabetic Mellitus will affect 101 million people in India in 2030; the largest number in any nation in the world. Our work is an attempt to speed up preliminary screening of DR to cater to the future requirement of such a huge number of diabetic patients. We have trained and validated robust classification models on publicly available datasets for early detection of DR. We have applied state-of-the-art deep learning models based on Convolutional Neural Networks (CNN), to exploit data-driven machine learning methods for the purpose. We framed the problem as a binary classification for the detection of DR of any grade (Grade 1–4) vs. No-DR (Grade 0). The developed preliminary automated screening system will act as an aid to the manual diagnostic process by referring DR patients to an ophthalmologist for further examination (if detected positive) well in time to reduce the risks of vision loss.*

Keywords: *Diabetic Retinopathy*

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