DEEP LEARNING FUNDUS IMAGE ANALYSIS FOR EARLY DETECTION OF DIABETIC RETINOPATHY

IDEATION

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TOP 3 PRIORITIZED IDEAS:

1. Upon further development on larger and more diverse datasets, such an algorithm could enable early diagnosis and referral to a retina specialist for more frequent monitoring and even consideration of early intervention. Moreover, it could also improve patient recruitment for clinical trials targeting DR.

2. Diabetic Retinopathy is a retina disease caused by diabetes mellitus and it is the leading cause of blindness globally. Early detection and treatment are necessary in order to delay or avoid vision deterioration and vision loss. To that end, many artificial-intelligence-powered methods have been proposed by the research community for the detection and classification of diabetic retinopathy on fundus retina images.

3. Requires an efficient screening system, The present work considers a deep learning methodology specifically a Convolutional Neural Network(CNN), which is applied for the early detection of diabetic retinopathy. It classifies the fundus images based on its severity levels as No DR, Mild, Moderate, Severe and Proliferative DR.