# Identification and Classification of Diabetic Retinopathy Progressive Stages Using Deep Learning

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**Abstract:**
Diabetes has emerged as a major global health challenge, with India contributing a significant share of cases, accounting for nearly one-sixth of the affected population. A major microvascular complication is diabetic retinopathy (DR), which can lead to vision loss. Traditional diagnostic procedures are both resource-intensive and slow, emphasizing the necessity of automated detection approaches. The present research investigates the application of advanced deep learning architectures-ResNet18, VGG19, MobileNetV1, and MobileNetV2-for DR detection. The objective is to determine the most suitable model that combines computational efficiency with high diagnostic accuracy and rapid training at a low cost. Our modified MobileNetV2 achieved the best results, with 88% accuracy,89% precision, 88% recall, and an F1-score of 88%.

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