

Enhanced Ophthalmic Diagnostics with RetinaNetX Leveraging Combined Image Processing Techniques for Diabetic Retinopathy

Publisher: IEEE

Cite This



G. Murali ; Kumar. N All Authors

18
Full
Text Views



Abstract

Document Sections

- I. Introduction
- II. Dataset
- III. Related Work
- IV. Motivation
- V. Methodology

Show Full Outline ▾

Authors

Figures

References

Keywords

Metrics

More Like This

Abstract:

The burgeoning field of medical image analysis has witnessed significant advancements with the advent of deep learning. Our study presents RetinaNetX, an innovative convolution neural network framework that integrates Prewitt Edge Detection with EfficientNetB4 for enhanced detection of diabetic retinopathy in fundus images. This approach capitalizes on the strength of edge detection algorithms to highlight critical features in retinal images, which are then processed through a deep learning model tailored for highaccuracy classification. We evaluated RetinaNetX using a comprehensive dataset, and the results demonstrated marked improvements in diagnostic accuracy. This novel method paves the way for more reliable and efficient ophthalmic diagnostics, offering a significant leap over traditional image processing techniques.

Published in: 2025 International Conference on Emerging Technologies in Engineering Applications (ICETEA)

Date of Conference: 05-06 June 2025

DOI: 10.1109/ICETEA64585.2025.11099951

Date Added to IEEE Xplore: 11 August 2025

Publisher: IEEE

► ISBN Information:

Conference Location: Puducherry, India

Sign in to Continue Reading

Authors	▼
Figures	▼
References	▼
Keywords	▼
Metrics	▼





IEEE Personal Account

CHANGE
USERNAME/PASSWORD

Purchase Details

PAYMENT OPTIONS
VIEW PURCHASED
DOCUMENTS

Profile Information

COMMUNICATIONS
PREFERENCES
PROFESSION AND
EDUCATION
TECHNICAL INTERESTS

Need Help?

US & CANADA: +1 800
678 4333
WORLDWIDE: +1 732
981 0060
CONTACT & SUPPORT

Follow



[About IEEE Xplore](#) | [Contact Us](#) | [Help](#) | [Accessibility](#) | [Terms of Use](#) | [Nondiscrimination Policy](#) | [IEEE Ethics Reporting](#)  | [Sitemap](#) | [IEEE Privacy Policy](#)

A public charity, IEEE is the world's largest technical professional organization dedicated to advancing technology for the benefit of humanity.

© Copyright 2025 IEEE - All rights reserved, including rights for text and data mining and training of artificial intelligence and similar technologies.