Research Article
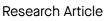
Enhancing the Accuracy and Clinical Applicability of Hybrid Cnn-Based Optical Coherence Tomography Image Classification of Retinal Diseases

M. Rajesh, B. Rajalingam, M. Mahendran, V K Senthil Raghavan, and 1 more   ⌄

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Abstract   ⌄

This investigation uses SD-OCT for retinal imaging, using data collected from 4686 patients (OCT-17) and 45 patients (Srinivasan-14) using a conventional SD-OCT equipment. 84,484 pictures make up the OCT-17 dataset, which is split into DME, CNV, Drusen, and normal groups; the Srinivasan-14 dataset contains volumetric scans from people with AMD and diabetic macular edoema. When used to retinal OCT classification, the suggested HCTNet model combines Vision Transformer (ViT) and Convolutional Neural Networks (C-Net) for optimal results. The Low-Level Feature Extraction module, the Transformer branch for global sequences, the parallel Convolutional branch for local features, and the adaptive Feature Fusion module are all key components in HCTNet's ability to overcome the hurdles of background noise in ViT.

1. Introduction ⌄

2. Materials and Methods ⌄

3. Results and Discussion ⌄

4. Conclusion ⌄

Declarations ⌄

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