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Automated Cataract Detection Using Deep Learning and P Models

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A B S T R A C T

Cataracts are a leading cause of vision impairment worldwide, and early detecti severe vision loss. In this paper, we propose an automated cataract detection sys models, specifically pre-trained Convolutional Neural Networks (CNNs) including 19, ResNet-50, Inception-v3, and DenseNet-121. The system is designed to classify fundus images with high accuracy and efficiency. A dataset of 1130 fundus imag images to improve model generalization. Experimental results show that DenseNe models, achieving an accuracy of 92%, with a precision of 91%, recall of 90%, and system also incorporates data augmentation and attention mechanisms to en scalability. Our proposed model, CatCNNNet, offers a practical solution for real-t can be deployed in both clinical and mobile health applications. Future work will the model's scalability and exploring interpretability techniques for clinical use.

Keywords: *Cataract Detection.Deep Learning Convolutional Neural Networks (CI*