# Automated and Manual Image Processing Techniques for Retinal Disease Detection Using OCT Images

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**Abstract:** *Retinal diseases are one of the major causes of vision impairment and blindness worldwide. Early detection of retinal abnormalities plays a crucial role in preventing permanent vision loss. Optical Coherence Tomography (OCT) is a non-invasive imaging technique widely used for retinal examination. However, manual analysis of OCT images is time-consuming and depends heavily on the expertise of ophthalmologists.*

*This paper presents a comparative study of manual and automated image processing techniques for retinal disease detection using OCT images. The proposed system analyzes OCT images belonging to four categories: Choroidal Neovascularization (CNV), Diabetic Macular Edema (DME), Drusen, and Normal retina. Python-based image processing techniques are used for preprocessing, enhancement, and classification. The results show that automated image processing provides faster, consistent, and reliable results, making it suitable for assisting medical professionals in early diagnosis..*

**Keywords**: OCT Images, Retinal Disease Detection, Image Processing, Medical Imaging, Automated Diagnosis