Classification of cross-sectional scans of the retina

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INTRODUCTION

Recent technological advances in adaptive optics (AO) and high-resolution ophthalmoscopy have resulted in sharper images of the cellular retina than previously possible. AO-OCT is a promising diagnostic tools in eye clinics. In this study, we propose to:

1. Diagnostic a diseased retina using computer-vision techniques applied on AO-OCT scans from both healthy subjects and subjects with Retinitis Pigmentosa.

PHOTORECEPTOR IMAGING

METHODS – PHOTORECEPTOR IMAGING

• Recent technological advances in adaptive optics (AO) and high-resolution ophthalmoscopy have resulted in sharper images of the cellular retina than previously possible. AO-OCT is a promising diagnostic tools in eye clinics. In this study, we propose to:

PHOTORECEPTOR IMAGING

• Extract features such as SIFT and cluster them.
• Train an SVM on scans from healthy and unhealthy subjects (800 scans).
• Classify test images (650 scans).

RESULTS AND DISCUSSION

FEATURE EXTRACTION

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• Our approach is efficient for RP disease, but was not tested for other diseases.
• Possible future application is classify the individual cones.

REFERENCES

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