



CLSA Approved Project

Applicant

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Project Title

Image and gene guided prediction of age-related macular degeneration and its progression using deep learning approaches

Project Summary

Age-related macular degeneration (AMD) is the leading cause of irreversible blindness among older adults in Caucasians. Most existing predictive models that focus on assessment of AMD future risk are based on genetic, demographic, and clinical data. However, insufficient sample size or lack of replication is a major concern of applying these approaches in practice. Moreover, it is expensive and time-consuming to collect manually graded clinical data. With genotype data and retinal scan images from CLSA and other existing sources, we plan to first construct deep learning models for automated grading of clinical AMD labels from retinal scan images. Then we propose to predict AMD future risk using deep learning models comprising both image and genetics information.

Keywords

Macular degeneration, Retinal scan, Genetics, Deep learning