CS294-164 Report - Week 10

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1 Adaptive optics for studying visual function: A comprehensive review

1.1 Main Idea

The paper provides an overview of all approaches that use Adaptive Optics in vision science. Applications of AO can be broadly split into two types: retinal imaging and testing visual functions. The review also touches uponthe types of science that can be accomplished with AO with a view to future applications

1.2 New Ideas based on readings

2 High Resolution Imaging in Microscopy and Ophthalmology

2.1 Main Idea

The paper talks about targeting individual photoreceptors in the retina for visual function testing. The authors describe in detail, the challenges around stimulating specific cells in the retina. Particularly correcting for monochromatic aberration, stimulus light modulation and image motion compensation, chromatic dispersion compensation. The combination of the technological innovations described in this paper have enabled the study of in vivo psychophysical responses when single cones or groups of cones have been targeted for stimulation.

2.2 New Ideas based on readings

One phenomenon that remains unexplained is that some cone cells are more sensitive to light than others. Is there a way to analyze this, find patterns/explanations for this using the Oz Vision system. It would also be interesting to find applications of wavefront technology in cameras.