

## Summary

Vision science is an umbrella term involving work from neuroscience, psychophysics, cognitive science, and ophthalmology to understand how we see or “perceive” our environment. Reading this sentence involves a significant amount of processing power, and our visual system is well developed for maintaining attention in a changing environment. Our knowledge of human vision is often applied to artificial vision, specifically for face/object recognition, medical imaging, autonomous vehicles, and more.

## Relation to Neurocomputation

Getting a person, animal, or robot to see something and then recording what they saw is much easier said than done. Where exactly do we look when we look at a face? How is it easy for us to identify a friend among a crowd of people? Does everyone see the same color red? Recording eye movements over time is a lot of data. Image processing techniques can also be applied to alter or enhance an image and is also a lot of data. New technologies such as AR/VR offer up new opportunities for visual research. It is also important to understand what happens when sight is impaired, especially as more people are at increased risk of vision loss as they age.

Week	Type	Byron	Students
1	Presentation	<ul style="list-style-type: none"><li>○ Icebreaker</li><li>○ Expectations for quarter</li></ul>	<ul style="list-style-type: none"><li>○ Attend meeting</li></ul>
2	Discussion	<ul style="list-style-type: none"><li>○ How is perception related to psychology?</li><li>○ Discuss how student articles relate to their interest</li></ul>	<ul style="list-style-type: none"><li>○ Schedule best time for meeting</li><li>○ Preference for zoom or in person</li><li>○ Brainstorm ideas -&gt; find one article published after 2015 related to interest</li></ul>
3	Presentation	<ul style="list-style-type: none"><li>○ Intro to R part 1 importing data and removing blanks</li></ul>	<ul style="list-style-type: none"><li>○ Download R and R studio</li></ul>
4	Discussion	<ul style="list-style-type: none"><li>○ Best practices for reading articles</li><li>○ Discuss insights and limitations of papers found</li></ul>	<ul style="list-style-type: none"><li>○ Connectedpapers</li><li>○ Scribbr</li><li>○ Sheets all ready</li></ul>

		-> suggest alternative	
5	Presentation	<ul style="list-style-type: none"> <li>○ Intro to R</li> <li>○ Part 2 analysis and visualization</li> </ul>	
6	Discussion	<ul style="list-style-type: none"> <li>○ Provide feedback on presentation and suggest ideas</li> </ul>	<ul style="list-style-type: none"> <li>○ Summarize 2 papers related to your interest in 10 minutes</li> <li>○ Pick three most important key words and talk about what needs to change</li> <li>○ 5 minutes for questions and feedback</li> </ul>
7	Presentation	<ul style="list-style-type: none"> <li>○ Basics of Eye Tracking</li> </ul>	<ul style="list-style-type: none"> <li>○ What area of your research involves large amounts of data?</li> </ul>
8	Discussion	<ul style="list-style-type: none"> <li>○ Designing a study and forming a hypothesis</li> </ul>	<ul style="list-style-type: none"> <li>○ Outline experiment from beginning to end</li> </ul>
9	Presentation	<ul style="list-style-type: none"> <li>○ Potential opportunities and labs for experience</li> </ul>	<ul style="list-style-type: none"> <li>○ Rough draft of resume/CV</li> <li>○ Cover Letter practice</li> </ul>
10	Discussion		

At the end

- Student has specified their research interest, identified data that could potentially be involved (how to test it), and has a solid understand of what impact the research could make on the population
- Student has identified 3 labs/internships that relate to their interests
- Students have spent time looking at recent studies that focus on what they are interested in -> bibliography/work cite of 7 articles