MANCHESTER 1824
The University of Manchester

COMP37111: Advanced Computer Graphics

Workshop 3 : Colors + Principles of Animation

Zahra Montazeri

October 2022

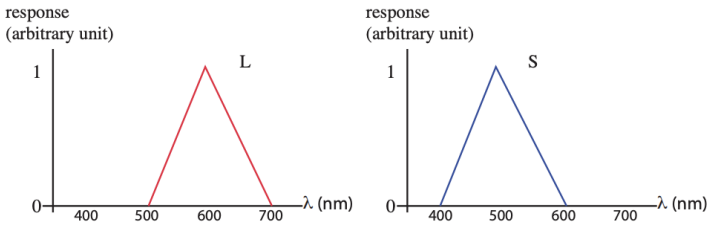
Department of Computer Science
The University of Manchester

Welcome back!

In this week's workshop you will again split into small groups and reckon the following questions and we will re-gather to discuss our findings and answer some questions in an interactive tool called Mentimeter. We can again safely assume you have already watched the videos for week 3 and we will review on basics of color following by some principles in animation which will be continued in the next two weeks.

1. What is color? How do we see it? Can you explain the terms in this equation I(λ) x R(λ) = C(λ)? *Color is wavelength , by cone cell, 不会*
2. Which defines color saturation?
   - It's defined by the area under the curve
   - The color gets less saturated as gets closer to white
   - The color gets more saturated as gets closer to white
   - The color gets less saturated as gets closer to black
3. How human eye perceives color? What is color space? Define tristimulus value and chromaticity chart. *By cone cell receive three kind of wavelength. The color people can see in the real world.*
4. Imagine the cones of human eye were bi-chromat vision and the color response is as following. What would be the pair of cone responses LS for a stimulus of monochromatic light at 500nm with total power 2.8 in our arbitrary units?

   0 2.8



5. What is the required amount of these two primaries to match unit-power stimuli at the wavelengths $\lambda = 550$. *0.5*
   0.5
6. Review the following terms and consider adding them to the course Glossary page if needed: Hue, saturation, intensity, metamer, color gamut, gamma encoding, additive colors, subtracting colors. *Saturation:色彩曝光度. Hue: what the colour. intensity: the depth of the colour. additive colours: 燃料之类的. subtracting colors: 光之类的.*
7. Different spectra can result in perceptually identical sensations. What this phenomena is known as? *metamer*
8. Suggest few animations that you can now make based on what you've learnt so far (using pen, paper, powerpoint, Blender, ...). Describe the steps for making an animated dancing dinosaur. (We'll discuss the technical side of these steps in the next two weeks.)