

Exercise: Image and Video Processing

Sheet 6 – CIE Color Space

Exercise 1 – CIE Color Space

Read the documentation about the CIE color space (CIE Chromaticity Introduction, Color Temperature Introduction, CIE 1931 Color Space) and explain/answer the following terms and questions:

1. Explain the experiments about color perception conducted in the 1920's.
2. Color matching functions
3. CIE standard observer
4. Color, brightness (intensity)
5. Black body radiation
6. How can we define the color „white“?
7. Color Rendering Index
8. CIE Chromaticity diagram
 - Monochromatic light / spectral colors
 - Line of purples
 - Desaturated colors / white
 - Gamut / gamut of human vision
 - Why is the CIE diagram convex?
 - Metamerism
 - How are colors combined? What colors cannot be generated by combination of other colors?