CLRS720 – Computational Vision Science – Lab 1

Objective The objectives of this lab assignment are to practice running a method of adjustment experiment (as experimenter and observer), processing, analyzing, and plotting data in Matlab, and writing a summary of the research.

Background The Helmholtz-Kohlrausch effect explains that saturated colors tend to appear brighter than neutral/gray/white colors having the same measured luminance. The H-K effect predicts that this extra brightness increases with saturation, depends on hue, and varies by surround (background) color.

Instructions A Matlab GUI called **`brightnessMatching.m`** is provided – this GUI will present a reference color patch (left) next to a neutral sample patch (right). You will adjust the sample patch by key presses until the sample appears to match the reference in brightness – this is 1 trial.

There are 8 reference patches and 3 background colors. You will complete a trial for each reference patch (8), on each background color (3), with 2 repetitions (2), for a total of 48 trials. All students will pool their results to create a comprehensive dataset for analyses.

The deliverables for this lab are a PDF file and a Matlab script file. The PDF will be titled **`YourNameLab1.pdf`**, with a brief lab writeup (~1-2 pages) summarizing the experiment: Use the attached template to write an Abstract, Introduction/Background, Methods, and Results section with Figures and References. Make sure Figures are clear, with appropriate titles and axis labels. The Matlab script file will be titled **`YourNameLab1.m`**, and will contain the Matlab code used to process, analyze, and plot the data.