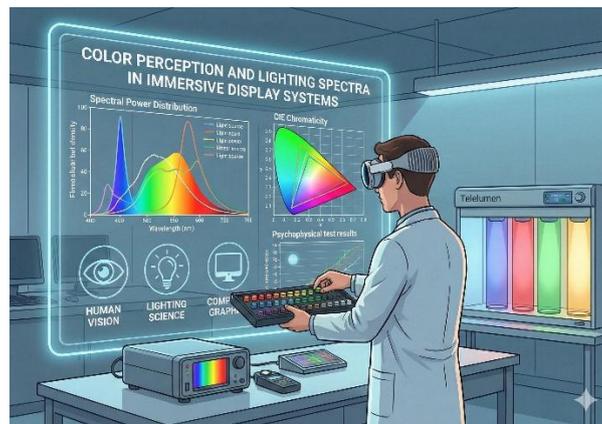


# COLOR PERCEPTION AND LIGHTING SPECTRA IN IMMERSIVE DISPLAY SYSTEMS



## GOAL

The project aims to study human color perception under different lighting conditions and to investigate whether modifying the spectral power distribution of light can improve the color discrimination in immersive systems.



## HOW?

The project will combine experimental testing and analysis of color perception. Human observers will perform color vision tests under various lighting spectra and display settings. Different spectral modifications will be applied to evaluate their impact on perceived colors. Comparisons will be made between standard lighting conditions and optimized spectral configurations on head-mounted displays in MR mode.

## RESEARCH TOPICS ASSOCIATED

### HUMAN VISION

- Color perception
- Psychophysical experiments

### LIGHTING SCIENCE

- Spectral properties of light and illumination

### COMPUTER GRAPHICS

- Display technologies and head-mounted displays

## AVAILABLE EQUIPMENT'S

- Quest 3, Vision Pro
- Spectroradiometer
- Telumen light booths

## GO FURTHER

The project could be extended by developing adaptive lighting that dynamically adjust spectral power distributions to user needs or environmental conditions. Further work may also include visual comfort and applications in accessibility (e.g., low vision), immersive training environments or medical and industrial visualization.