



# COLLEGE of ENGINEERING AND PHYSICAL SCIENCES

SCHOOL OF COMPUTER SCIENCE

## PhD Seminar 1

**Tuesday November 8, 2022 at 2:30pm via Zoom**

**Connor Geddes**

*Designing Digital Content to Accommodate for  
Colour Vision Deficiency*

**Advisor:** Dr. David Flatla

**Advisory:** Dr. Stacey Scott

**Advisory:** Dr. Neil Bruce

### **Abstract:**

Digital content and designs feature coloured components in an effort to provide information or enable distinctions. However, this information can be lost for those who have Colour Vision Deficiency (CVD). Over the past three decades research to provide digital aids has progressed by creating both tools which enable for simulations of types and severities of CVD and various corrections through recolouring. However, simulations have often been overvalued and in many cases start to replace CVD lived experiences when developing coloured interfaces and assistive tools. Further, the design of modern recolouring filters tends to take a destructive approach to change colours to 'correct' for CVD, often conflating normal colour vision with 'correct' colour vision.

This research first looks to understand the dangers in relying on simulations for both designs and assistive tools. Next, we look to understand the current perspectives and use cases of current assistive technologies like recolouring by those with CVD. Finally, we develop guidelines and provide general advice to show how design can be done to better accommodate those with CVD in the design of any interfaces. With this research we hope focus can go away from accommodation being a post-hoc addition and instead turn focus on integrating good design to accommodate those with CVD throughout the full design process.