INFORMATICS INSTITUTE OF TECHNOLOGY

In Collaboration with

UNIVERSITY OF WESTMINSTER, UK

ColMagix

An application which will enable UI designers to detect unsuitable designs / graphics for color blind individuals & to optimize designs in a more color-blind friendly way.

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Submitted in partial fulfillment of the requirements for the
BSc (Hons) Computer Science degree at the University of Westminster.

May 2023

ABSTRACT

Image processing is a field of computer science and engineering that deals with the manipulation and analysis of digital images. It involves techniques for enhancing, transforming, and representing images in a way that is suitable for further processing, analysis, or visualization. Machine learning algorithms can be used in image processing to analyze and classify images, extract features, and perform tasks such as object recognition, segmentation, and tracking. The proposed application aims to address the issue of inaccessible designs for individuals with color blindness. By using the application, user interface designers will be able to detect designs that may cause difficulties for color-blind users and optimize them to be more user-friendly.

The application will use advanced algorithms to analyze designs and suggest alternative color schemes that are distinguishable for color-blind individuals. This application will fill a gap in the design process, ensuring that all users, regardless of their color vision, can have a positive experience with digital products. In the context of the application described, machine learning algorithms could be used to analyze and optimize designs for color-blind individuals.

The algorithms would be trained on data related to color-blindness and design, allowing them to make predictions and suggest alternative color schemes that are distinguishable for those with color blindness. In comparison to similar work that has been done in the same domain, the solution is unique & better. The system has undergone extensive testing, produced excellent results, and been improved to achieve better performance and higher accuracy. The model can be improved for future innovations that might broaden the project scope.

Keywords: Image Processing, Machine Learning, User Interface / User Experience, Graphic Design

Subject Descriptors:

- Human-centered computing -> Human-computer interaction (HCI) -> Interaction design -> Web-based interaction
- Human-centered computing -> Accessibility -> Accessibility technologies -> Color blindness
- Applied computing -> Document management and text processing -> Document analysis -> Image processing
- Applied computing -> Media arts -> Digital art and graphics -> Color