



**INFORMATICS  
INSTITUTE OF  
TECHNOLOGY**

INFORMATICS INSTITUTE OF TECHNOLOGY

In Collaboration with

UNIVERSITY OF WESTMINSTER

**WeViCheck: A hybrid approach in detecting presentation defects  
in GUI**

Final Report by

Mr. Kevin Dilshan Kularathne

Supervised by

Ms. Ganesha Thondilege

Submitted in partial fulfilment of the requirements for the B.Eng. in Software  
Engineering degree at the University of Westminster.

**July 2021**

## **ABSTRACT**

Testing the Graphical User Interface (GUI) of applications is a tedious task. But since it directly interacts with the user, the GUI is a very crucial component of applications. Much research has been conducted to assist the testing phase. This research was focused on identifying a new approach to detect defects without depending on baseline images. Based on the prototypes a hybrid model which was proposed by UIED was found to be suitable in identifying the elements. The model separately detects elements as text and non-text elements. This research further tries to develop it to detect defects. The solution was evaluated separately on the improved detection model and defect detection. The hybrid approach shows much suitability to defect detection as different types of defects require different detection techniques. The accuracy of the element detection model using image processing reduces with the available background noise in screenshots such as images. A better element detection process can increase the accuracy of all the defect detection tests conducted as they are mainly considering the shape and position of the element.

**Keywords:** Image processing, OpenCV, Optical Character Recognition, GUI testing