

## **ABSTRACT**

This research uses AI, Computer Vision, and Deep Learning to create a free Indonesian-language cognitive therapy website. Currently, there is no such website available for free in Indonesia. Additionally, the manual classification of mouth movements is expensive and requires professional therapists.

In this study, we use MediaPipe, a Google-developed framework that can detect 468 facial landmarks and 33 body landmarks to estimate movements in video frames. To classify these movements, we use the Random Forest Classifier method, which can read and classify landmarks in video frames.

The test results show that using MediaPipe and the Random Forest Classifier is effective in classifying facial movements with high accuracy. The accuracy is 100% at a distance of 60cm and a viewing angle of 0°. Testing in different lighting conditions shows similar accuracy. Overall, lighting intensity does not significantly affect the motion detection process.

**Keywords :** *AI, Computer Vision, MediaPipe, Random Forest Classification, Cognitive Therapy, Accuracy*