ABSTRACT

Object detection is often referred to as object detection is a process used to identify and determine the presence of certain objects in digital images. Detection of human body movement, especially its position, can be done by using computer vision capabilities which act as computer vision when detecting images or videos. Computer vision and machine learning can accurately detect human movement which is usually known as HAR (Human activity recognition). The HAR system aims to automatically analyze and recognize human activities using the information obtained.

This final project creates a position detection system on the human body using the mediapipe method. Mediapipe is a library used in this application to focus on image, video and other media recognition and analysis. Mediapipe is used to detect body parts, especially in detecting sitting and standing movements. The body detection process takes place with the help of the Python programming language, where videos of people become objects to be analyzed. The way it works is by taking a video with a smartphone camera and the system will detect the video image and on each limb the dots connected by lines can be displayed so that it will look like the skeletonization of the human body. The work on this final project creates an application system that is made using a mediapipe that can read and classify angle values on body parts based on the leg angle value, the system can provide information whether the object in the video is in a sitting or standing position according to the movement made by the object .

The results of the implementation of this final project can classify predetermined angular values, namely for leg angles and can bring up angular values according to movements while sitting and standing and from these values can provide information on detected video objects in sitting and standing positions. From the test results which involved three videos and three people as objects in each video and showed that the system could provide information on sitting and standing which was carried out with 3 video test scenarios. The test results show that the average leg angle value for video testing 1 detects standing position, namely 178.5759 and sitting 102.6634, video test 2 detects standing position, namely 169.3831 and sitting position 107.3314 and video testing 3 detects standing position, namely 161.3642 and sitting 117.3219. In the test results classify according to the value of the angle of sitting < 130 and standing > 160 and with 100% accuracy detected.

Keywords: *Mediapipe, detection sit, stand*