

ABSTRACT

Objects speed measurement is one of the most widely researched area today. Although most development of this area is intended to measure the speed of motor vehicles, such as a car or motorcycle, but did not rule out this field intended for other purposes. In the field of sport for example, measuring the speed of the object can be used to measure the speed of smash in badminton or to measure pitch velocity in baseball. Currently, there are several tools that can be used to measure the speed of the object. Among others, loop detector, laser detector, and radar detector. But these tools have some drawbacks, including its big enough, so it is not practical and its price is still very expensive.

This final task is to implement the Lucas-Kanade algorithm to calculate the speed of an object movement on the handset (mobile phone) based on Android operating system. Android-based handsets in addition to being selected as one of the most types of handsets in use today, as well as Android-based handset gives complete freedom for application developers to create and explore to what extent the potential of the android operating system. Lucas Kanade algorithm itself is one of the tracking object movement algorithm that is most widely used and developed in the world.

The tests was performed on the system using two kinds of parameters, namely shooting distance, and the velocity of the object that is measured. From the tests, it is obtained that the best accuracy rate-making system is at a distance of 8 meters with average accuracy of 92,77%, and the velocity of the object 40 km/ h with average accuracy of 92,56%.

Keywords : object velocity, android, lucas-kanade, object tracking