ABSTRACT

In various aspects of identification, one of the popular technology used is object detection using a camera. With this technology, a system can be varied to control the hopes further simplify and improve the precision of control. The appropriate goal, this thesis made to develop control techniques on quadcopter.

This system was designed using the method of digital image processing with the introduction of the shape and position. Then the motion detection system quadcopter using the camera. Quadcopter position information is then combined with a model of the control system to predict the next command. By combining the control quadcopter and object recognition using the camera, this project is able to create a new system by means of control quadcopter without using a controller.

The system has been able to follow the existing setpoint or make the track on a system with object recognition accuracy rate of 95% and the lowest error rate of the control system on the 0.852 pixel. Differences quadcopter current position with setpoint position when quadcopter thought it was in a position setpoint about 10 pixels on the camera readout or equal to 4 centimeters at actual size.

Keywords : Quadcopter control, object tracking, digital image processing