

## **ABSTRACT**

*Collecting a lot of table tennis balls on the floor will take a lot of time and energy. A table tennis balls collector robot can be made to solve the problem. The previous research didn't implement a path planning system so it has some weakness. Robot will take the balls randomly or move on a fixed path.*

*The purpose of this research is to implement a path planning using nearest neighbour method on the robot so it will be able to make a shortest path for collecting the balls. This robot is equipped with a camera as its sensor which reads the ball image as an input that will be processed by the microcontroller, then the microcontroller will move the motors as an output.*

*After doing the test, robot is able to make a path to collect the balls by calculating the distance between balls and the turn degree. The path planning system on this robot is able to reduce the total distance of balls collecting path by average of 66,04%. Robot is able to move to collect the balls by following the given path from path planning system, yet it still has some shortage on some condition.*

**Keyword** : *table tennis ball collector robot, path planning, nearest neighbor.*