

ABSTRACT

Until now in the restaurant industry uses human labor to deliver and bring food. But often people make mistakes such as dropping or spilling food and drink. Therefore, food trolleys can be an alternative as a food delivery tool. But sometimes the use of trolleys still face obstacles such as the spill of food and drink when passing uneven roads. That's because the food or drink container on the trolley is not stable.

Therefore this research aims to design smart trolley system by using IMU sensor (Inertial Measurement Unit) and controlled by PI method as its algorithm Smart Trolley will be controlled by Arduino Uno as a microcontroller and servo motor as container movement. Some devices used to design smart trolley that is IMU sensor, Arduino Uno, and servo motor.

With this research is expected to be a better alternative in solving the problem. Because the results obtained have a small overshoot value, which is 6% at Roll angle and 5% at Pitch angle.

Keywords: *Smart Trolley, IMU Sensor, Arduino Uno, Servo Motor, PI*