

Demo

**PROTOTYPE OF THE SYSTEM SIMULATING THE FORCE
ACTING ON THE OBJECT, REFERRING TO THE FORCE
FROM THE IMU SENSOR VALUE**

OBJECTIVE

To create a simulation system for the movement of objects when a force is applied to the Gazebo by using the actual force obtained by converting the value from the IMU Sensor into the force that will be applied to the object on the Gazebo.

SCOPE

Actual Object

- The actual object is a cylinder with a diameter of 32 mm and a height of 60 mm. An IMU sensor is attached at the center of the object, which is made from PETG plastic.

Simulation System

- The system is constructed on Gazebo with the object model being a cylinder of the same size as the actual object.
- The force applied to the object in the simulation system is only applied at the center of the object.
- The force applied will only be in the x and y axes.

SCOPE

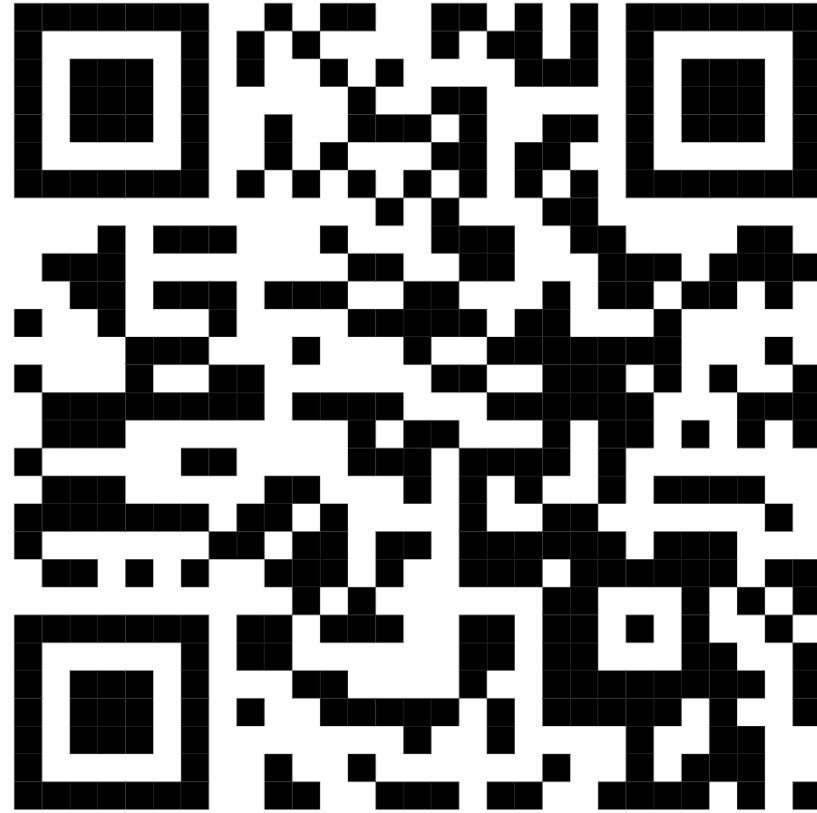
Testing System

- Testing is conducted by attaching the actual object to a core XY movement system that can move 0.18 m in the x-axis and 0.18 m in the y-axis.
- The system will move with an acceleration not exceeding 0.5 m/s^2 .

EXPECTED STUDY RESULTS

Simulation System for Object Movement under Applied Forces on Gazebo
Using Actual Forces Derived from IMU Sensor Data

GITHUB



Link : https://github.com/DenWaritthon/imu_force_ws.git

Thank You
