

AUTONOMOUS ROBOT SUMO

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ABSTRACT

Sumo is a traditional sport in Japan. Two wrestlers are trying their best to push each other out of the circle during the competition. The wrestlers are well trained to win the competition. As for the robot sumo competition, the wrestlers are robots and having the same aim as the human wrestler, which is push the opponent out of the circle.

The main objective of this project is to build 2 robot sumo and the ring for competition. The robots were named according to their shape; the first robot sumo is called **Round Sumo** and the other one is called **Rectangular Sumo**. The functions of these robots are to push each other until one robot reached out of the ring. When one robot is out, both robots have to be stop.

The motors, sensors and control system will be the keys of this project. The robot requires high torque motor to push the opponent out of the circle. Sensors were used to detect the edge of the ring and the opponent's position. Microcontroller was act as the brain of the robot; it controls the robot's movements and activities. The extra features like facial expression display and remote control starter have been added to this project to increases the functionality of the robots. Lastly, the overall objectives were 100% archived and it worked successfully with the extra features.