

SUMO ROBOT



EGE SEÇGİN

Sumo Robots

Sumo robots emerged when those interested in robotics as a hobby wanted to have robots do the same wrestling, inspired by Japanese sumo wrestling.

Sumo robots are robots with autonomous movement capability, containing electronic circuits, designed to fight each other, and programmed for intended movements. They are produced in different standards and categories.

Sumo robots meet each other on a round ring with certain standards and features called Dohyo.



During the match, the sumo robots try to throw each other out of the line around the ring. Thanks to the contrast sensors, the robots detect the white line around the dohyo, try not to go out of the ring, try to stay in the ring. Various sensors (IR, ultrasonic, laser, etc.) are added to the robots in order to detect the environment and the opponent robot in a short time, and improved tactical algorithms are also loaded.

The mechanical and electronic design and the algorithms of the installed programs are effective in the winning of the sumo robots.

My Thoughts

I decided to design my own SUMO robot for racing in regional competitions. I felt like I had a child when I designed the whole body, 3D printed it, drew the PCB layout, coded the tactics and saw it worked exactly the way I wanted. It was so fun to race with it and was a great experience for my design perspective.

The main tactic of my robot was not to attack its opponent but to spin around itself, avoiding the opponent as much as possible, preventing the opponent from seeing the white line, and making its opponent fall from the dohyo by making sudden turns while his opponent comes to him at full speed.

Because of the tactics I am using, it takes its name as Mevlana. Mevlana is a cultural figure in Turkey who lived in the 13th century and He and his cult used to spin around themselves to meditate.

Here is a footage of this meditation;



I wish I could share some footage while my robot was racing but I've lost them all due to data loss. I only have chassis of it as you can see on the cover but it's not working since I had to use the components it used to have for other projects.

Scheme and PCB

