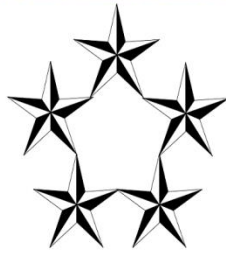


Five Star Innovation, LLC.



Robotics, Coding, and STEM Competition

2020 - Sumo

This challenge takes the top 8 highest scoring sumo-bots into a double elimination, tournament style, autonomous robotics head to head combat, with the winners moving on to the next round.

Objective

Your team must design and code an autonomous robot that can find your opponent's robot and push it out of the Sumo arena.

Constraints

- Any robot that can be coded to run autonomously, meets size requirements, and who's total cost is under \$1,000 may be used.
- NO remote control of any kind may be used in this challenge. All robots MUST operate on a coded set of instructions that do not require any type of user interaction, beyond sending the initial instructions for the robot to start the challenge.
- Robot must be 20 cm x 20 cm or smaller to compete
- There are 2 categories. Under 1kg in weight and under 3kg in weight. All ages can compete in either weight class.
- Robot is prohibited from damaging the field and endangering participants, judges, and spectators
- Robot is prohibited from emitting gases, liquids or dust

Challenge Rules

- Each team must start their robot at their respective starting area, designated on the track. Robots will be placed on the sumo arena, at the outer white line, facing their opponent, directly across from each other.
- Once the judge signals the beginning of the match, each team will start their robots. There must be a 5 second delay from when the team starts their robot and the robot begins moving.
- All sensors (except for those designed to accept remote commands) are acceptable for use in this challenge and highly encouraged.
- Winning a match will earn your sumo 100 points.
- Losing a match earns you 0 points.
- If, after 90 seconds, there is no winner, match will be considered a draw and both robots will split the 100 points.

- Each match will last 90 seconds maximum. Time is stopped when one robot is pushed out of the arena with bonus points awarded to the winner for each second left over in match play. (Example: Opponent is pushed out after 15 seconds of game play, leaving 75 seconds of time remaining. Winning team gets 100 points for winning AND 75 points bonus for the 75 seconds remaining). Any contestation as to the determination of the winner, must be made before the robots are taken off of the field of play, and will be directed to the Challenge Master in charge of the specific challenge. The ruling made by the Challenge Master will be final.
- Teams will have the opportunity to have 10 official runs with the best 5 runs counted towards their overall score. These 5 runs will be added together for their total score.
- Top 8 teams, based off of total score will advance to playoffs where the overall winner will be determined.
- Once a challenge has started and the robots have begun their run, they cannot be touched by anyone until the challenge has concluded and the judge has given the ok to pick up your team's robot. The only exception to this rule is for safety reasons.
- If any team member touches their robot after challenge has begun, their robot will be disqualified from the race.
- If any team member from an opposing team touches a robot running the challenge, and that robot is not theirs, the robot belonging to the offending team will be disqualified.
- Official tracks will be available to practice on when not in use by competitors.

Challenge Specifications

Track

- Track is a black circle 44" in diameter with a 1" white border. Track will be made of vinyl or wood.

