

## ABSTRACT

*Singapore Robotic Games (SRG) is one of the organizers of the international Robot Sumo competition. In a game there are 2 pieces of robot that will compete to drop each other. Robots that arena out first will be declared defeated and the defendant will be declared the winner. The robot is controlled by a pilot using the Remote Control (RC) wirelessly. Robot has a maximum size of 20cm x 20cm and maximum weight of 3kg. Arena used in a Sumo Robot match is a circle with a diameter of 154cm and the end of the arena is given white paint with a width of 5cm.*

*Sumo Robot Making begins with design creation using Autodesk Inventor. The finished design will be printed using CNC (Computer Numerical Control) which is the base material made of aluminum. For the working system used as a central arduino nano system controller, while to move the robot used DC motor with a large torque and high speed that connect to moto shield monsters for speed adjustment on DC motor. Everything system will be integrated with PCB which is designed using Eagle.*

*The result there are two sumo robots that have different specifications. Robot I has a length of 19.4 cm and a width of 19 cm with a weight of 2098 grams, As for Robot II has a length of 19 cm and a width of 20 cm with a weight of 2216 grams. And obtained a mechanical design is quite capable, that is, use existing gear obstacles. For the forward attacker 45<sup>0</sup> is used straight without radius. Then for the system used the existing motor in the robot to the two so that the robot has a slim body.*

*Keywords: Robot Sumo, Autodesk Inventor, Eagle, Singapore Robotic Games*