

ABSTRACT

In the millennium age the development of technology is very rapid, especially in the field of robotics from this thesis, I talk about how do I build this OMNI wheel robot, start from robot base framework mechanical designing then electrical circuit designing and finally program it through Arduino Mega as a microchip of Omni Wheel Robot. Additionally, to accomplish both thesis and the project OMNI wheel robot it self I consider some several Artificial Intelligent (AI) that has been developed around the world then implemented to this Omni Wheel Robot. Besides, basically, this thesis is a combination of computer science which is my major, an Artificial Intelligent and also electrical engineering then finally produce this OMNI wheel robot that features three Omni wheels and controlled by wireless PlayStation joystick as an output. Also in this thesis, both mechanical and electrical components description that used in this OMNI wheel robot are given one by one.

After robot base framework mechanical has designed and built, then next is design and build an electrical circuit of each component. The whole Omni wheel robot electrical circuit of all the electrical components was designed on Proteus one of electrical circuit simulation software, software that allows a designer to simulate and test the design before implementation and manufacture it as a real life robot.

Additionally in order to simulate how does this robot will be placed on I designed and built the arena of this robot consider the kind of robot is an Omni Wheel robot, therefore, I decide to make an official Omni field and definitely has been scaling down and conditioned based on the Omni robot size itself and this Omni field design is printed out on some kind of flat surface, therefore, could be arena that Omni Robot will be placed and played on. I used CorelDraw X8 to design the robot Omni field, a vector graphics editor developed and marketed by Corel Corporation this design software gives us an exact parameter dimensions values when our design will be printed on and also as based on vector graphics software our design would not be scratched or blurred out while it comes to be printed out.

Keywords: Omni Wheel Robot, Arduino Mega, Mechanical, Electrical Circuit