AUTOMATIC MOTORS-HEIGHT ADJUSTER FOR SPHERICAL WHEEL

By

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STATEMENT BY THE AUTHOR

I hereby declare that this submission is my own work and to the best of my knowledge, it contains no material previously published or written by another person, nor material which to a substantial extent has been accepted for the award of any other degree or diploma at any educational institution, except where due acknowledgement is made in the thesis.

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ABSTRACT

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Spherical wheel wheels are removed for self-balancing spherical wheel project. The motor rollers decrease in height if weight is applied. Designing and constructing the automatic motor's height adjuster is the primary step before the self-balance project. Three stepper motors and lead-screws are the main components used to control the height of the motor's rollers. Optical mouse sensor is used as a sensor to detect height misalignment in this project. The height adjuster mechanical design is done in SOLIDWORKS. Distance between the mouse's sensor and the ball is important in achieving optimal error detection. The mouse's sensor also needs to be aligned with the equator of the ball. In result, the motor's rollers will align with the ball when the spherical wheel is moving with weight applied. The basketball is used as the spherical wheel's main object for moving and it provides good friction surface.

Keywords: Motors-height Adjuster, Stepper Motor, SOLIDWORKS, Arduino Microcontroller

DEDICATION

I dedicate this works for me, my family, my friends and
the future of the country I loved: Indonesia

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