Documentation

# RoboWriter- Sebastian Dziura

Aim of the project was to construct a robot that will be able to write given words on the paper.

Robot is made of:

* Main constructrion
* 2 servo motors (ASI- 621MG)
* Stepper motor (17HS3401S)
* Arduino Mega Board
* ST L298N Board

Instruction:

* After turning on, You can type the word You want to write in the serial port screen.
* To change write a word in other verse, uncomment “changeVerse()” in the main loop and write in the brackets number of verse You want to write in. Positive numbers to go higher then default, negative to go above.
* To change size of letters find in the “setup” function fontSize variables and change them
* If letters are not written on the same level go to file “workspace” and function “goWorkspace”. There is a place for “correction” where You can add some additional millimeters to letter at certain positions.
* To turn off stepper motor program writes LOW to pins controlling it. You can find it in file “moving” in functions “up” and “down”.
* If word doesn’t fit in the workspace, instead of writing it will send a information via serial port screen.
* Robot writes only capital letters, but if You send small one it will recognize it and change to capital.
* You can use function “base()” to go to base position.
* “countCharacters()” returns maximum number of characters that can fit in the present verse with present character size.

**Program files:**

1. robowriter

This is the main file of a program, containing setup, global variables and main loop.

1. moving

Contains functions calculating inverse kinematics, moving to certain position or by certain distance randomly or in the straight line. Also contains functions to control stepper motor to move pencil above and to a paper.

1. workspace

In this file there are functions to find a workspace and move to the right places around this workspace.

1. alphabet

Contains sets of movement for all alphabet letters.

1. writing

Functions in this file read given words via serial port write down given words.