

## ABSTRACT

Robot become a choice to help people to do their job to overcome the problem of accuracy, security, flexibility and repetitive. Arm Robot is a kind of robot that can help human works. Research arm robot to draw 2D field. This project is made to demonstrate the movement of the robot which is controlled remotely. This arm robot is using the human machine interface (HMI) from the PC and microcontroller-based Arduino Uno R3 so it's interesting to learn.

The arm robot in this research consists of joint and link with 4 Degree of Freedom (4DOF). The actuator of arm robot is RC servo motor. Input from the PC with Visual Basic6.0. to draw a field of squares, circles and triangles with dimensional parameters. The PC send data to Arduino Uno R3 in the digital pulses format with serial communication. The microcontroller reads the serial data input and send data digital pulses. The digital pulses are sent to the servo motor controller to drive RC servo motors in the process for drawing a 2D field.

The final result from this research of arm robot using point to point movement is average success indication from arm robot for repetitive drawing square is 90% and for drawing triangle is 73%. Average success indication arm robot move to point position of square is 85%, move to point position of triangle is 86% and move to point position of circle (some angles) is 21%

Keywords : Arm Robot , Arduino Uno R3 , 2D field , serial communication