

ABSTRACT

Development of a robot as an assistant widely applied in many places such as museum, tourist attraction places, restaurants, or in the classroom. Robot as an assistant able to effectively help various of human tasks. In this final project, development of the robot focused as a teaching assistant, especially for the classroom with special needs/autism students. Applications of PID control and fuzzy PID trial process implemented with other various functions such as inverse kinematics, obstacles avoidance, and python based Open CV. This automation function integrated with Arduino Mega as a main control, and Arduino Uno as individual arm control with serial communication in each of microcontrollers.

Keywords: Teaching assistant robot, PID control, Fuzzy PID, OpenCV, inverse kinematics.



ABSTRACT

Development of a robot as an assistant widely applied in many places such as museum, tourist attraction places, restaurants, or in the classroom. Robot as an assistant able to effectively help various of human tasks. In this final project, development of the robot focused as a teaching assistant, especially for the classroom with special needs/autism students. Applications of PID control and fuzzy PID trial process implemented with other various functions such as inverse kinematics, obstacles avoidance, and python based Open CV. This automation function integrated with Arduino Mega as a main control, and Arduino Uno as individual arm control with serial communication in each of microcontrollers.

Keywords: Teaching assistant robot, PID control, Fuzzy PID, OpenCV, inverse kinematics.

