Name : Hossam Mohammed Alghamdi

Robot Project Working Paper arm

Overview

robot is a machine designed to execute one or more tasks automatically with speed and precision. We need robots because robots are often cheaper to use over humans, in addition itis easier to do some jobs using robots and sometimes the only possible way to accomplish some tasks! Robots can explore inside gas tanks, inside volcanoes, travel the surface of Marsor other places too dangerous for humans to go where extreme temperatures or contaminated environments exist. Robotics is an interdisciplinary branch of engineering and science that includes mechanical engineering, electrical engineering, computer science, and others. Robotics deals with the design, construction, operation, and use of robots, as well as computer systems for their control, sensory feedback, and information processing. Robotic system hasbeen widely used in manufacturing, military and surgery since the robot can perform many advantages and used as the countermeasure for some job that cannot be conduct by the human excellently.

In this report, he will explain the mechanism of details of the work on the arm robot project.

That worked with the team.

THE ORGANIZATIONAL STRUCTURE OF THE ARM PROJECT TEAM

MECHANICAL DEPARTMENT

M1   M2

ELECTRONICS AND POWER DEPARTMENT

EP1   EP2

IOT AND SOFTWARE DEVELOPMENT DEPARTMENT

IOT1   IOT2

ROBOTICS AND AI DEPARTMENT

AI1   AI2

INDUSTRIAL ENGINEER AND SYSTEMS

HOSSAM MOAMMED ALGHAMDI

Working Task List:

Mechanical Department tasks:

M1 : kinematic for seven degrees of freedom robot Aram analysis and implementation

M2 : Pantry gearbox for handshake robot arm using 3d printed gear and metal gear

Electronics and Power Department tasks:

EP1 : Motor drive design and implementation for robot arm

EP2 : Control circuit design using ARM controller

IOT and software development Department tasks:

IOT1 : User interface analysis, design and implementation for robot control system using JQUERY and web development technique

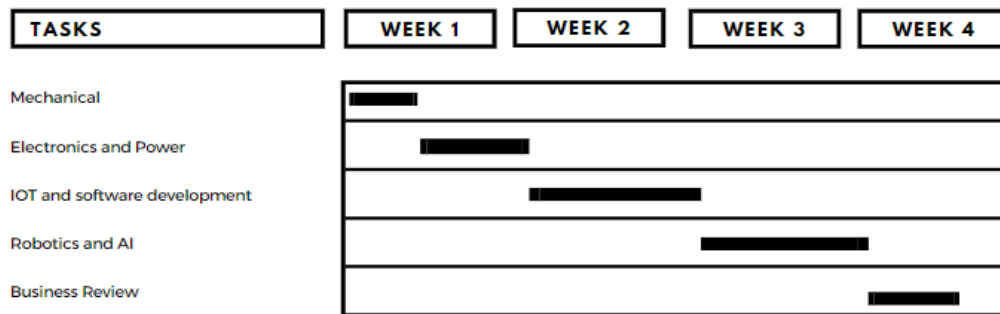IOT2 : User experience testing and improvement for robot control system

Robotics and AI Department tasks:

AI1 : Robot operating system installation and configuration

AI2 : Robotic radar using laser-based sensor and laser network

GANTT CHART

TASKS	WEEK 1	WEEK 2	WEEK 3	WEEK 4
Mechanical	███			
Electronics and Power		███		
IOT and software development			███	
Robotics and AI				███
Business Review				███

Production line stages:

Review all existing robot types

⬇

Design an arm robot with gripper

⬇

Implement the mechanical part of arm robot

⬇

Implement the electronic part of arm robot

⬇

Test the arm robot movements based on human movements via Xbox kinect