



Abu Dhabi Polytechnic

Students' Graduation Project Abstract

Department:	EMET	Semester:	Spring-2022
Project Title:	Advanced Optical Controlled Robotic Arm		
Supervisor:	Eng. Aboobacker Muriyan		

Abstract:

This project integrates digital technologies using programming languages, the mechanical movement of a robotic arm, and computer vision by tracking the movement of users. In this project, we connect the camera and the robotic arm by converting computer vision into digital commands executed by the robotic arm. The goal of the project is to design, build and manufacture a robotic arm to assist the physically disabled (unable to move their hands). The proposed technique is based on attaching the arm to the wheelchair for the disabled and controlling it through the movement of the head and eyes. Disabled people can pick up objects, press buttons on the elevator, and many other important basic uses. The first phase of the project (the current project) is limited to basic control of the robotic arm movement by tracking the movement of the head and eyes. The project does not need special training to be able to use it, as the system automatically recognize any user and track the movement of their head and eyes without the need for prior training. This project aims to increase the breadth of the segment benefiting from technological services to include the category of physically disabled people or those who are unable to move their hands for health reasons, whether it is a handicap in the arms or a problem in moving the muscles of the body. the palm of the hand and other injuries that the individual may suffer, which impair his use of the hands or the palm of the hand; The main goal of the project was to give them the ability to control the robotic arm without requiring their hands for anything.