

International Journal of Innovative Research in Science, Engineering and Technology

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Visit: www.ijirset.com

Vol. 8, Issue 11, November 2019

Survey on Mobile Controlled Wireless based Approach for Human Robot Interaction

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ABSTRACT: Robots are increasingly being integrated into working tasks to replace humans to perform the repetitive task. Generally, robotics can be divided into two areas, industrial and service robotics. When we talk about robots, people tend to think that robots are only use in the industry or just for the scientist to test about new technologies. The robot body was prepared mechanically and electrical components were chosen to be suitable to be used as a robotic arm. With the latest technologies nowadays, the interaction between the human and the robotic system in a wired system can be done as well by using a wireless system This project presents the development of a Mobile controlled wireless based robotic arm, Mobile Android App consists of provision for receiving 3 different inputs that are voice, hand gesture, phone tilt.

KEYWORDS: IOT, WIFI-Module, NodeMCU, Android app, Robotic Arm

I. INTRODUCTION

When we talk about robots, people tend to think that robots are only suitable to use in the industry or just for the scientist to test about new technologies. However, the main function of robots are to help humans in doing work either in the industries or just helping out doing normal household chores. This project presents the development of an Mobile controlled wireless based robotic arm, Mobile Android App consists of provision for receiving different inputs that are voice, hand gesture, phone tilt.

II. RELATED WORK

KeitaroNaruse et al. [1] portray the robot innovation is stretching out to social exercises, for example, network work, homeuse and diversion. By consolidating the robot innovation with the advanced open Internet, it is foreseen another application field will turn out. Nonetheless, Internet, as its temperament, does not allow constant correspondence among robots and different frameworks including human administrators and PCs. An alternate methodology is fundamental in regards to correspondence conventions and robot control plans. This paper proposes the mix of the Web administrations innovation and the selfruling robot movement age is the best possible methodology. For the movement age, we present the muscle-like control technique, which can be connected to any sorts of robots effectively with demonstrating an assortment of animal like movements. The strategy is connected to walk age of a reenacted four-legged robot, and the outcomes demonstrate that it can travel from a movement to another easily. Furthermore, the reproduced robot is constrained by the Web benefits over Internet for exploring the achievability of the proposed control conspire in a genuine system situation. The outcome demonstrates that the proposed technique gives us smooth control of the robot, even we have overhead of Web administration forms and postponed correspondence.

Tse Min et al. [2] depict a remote supervisory control framework that consolidates a PC arrange and a selfsufficient versatile robot is developed. The primary element of this framework is that clients simply need a universally useful PC and a World Wide Web program; they can order the versatile robot in a remote area through the Internet and Home Page. Equipment setup of this design incorporates an independent portable robot, server workstation, and different PCs; every one of them can speak with others by means of a PC arrange. Programming configuration incorporates task of the server, correspondence between the server and robot, and the UI.The framework as broad

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capacities for teleoperation, telerobotics tasks, and other media administrations. In view of this design we have executed staggered tasks for the client on different remote applications. The framework enables clients to legitimately control our versatile robot through the Internet and an amicable UI (by means of our Home Page), and they can get continuous pictures caught by a CCD camera that is mounted on the robot and other information from sensor estimation. At present, one can choose a spot in our research facility by clicking a point on the matrix guide appeared in the Home Page WWW. In the wake of getting the abnormal state order, the robot will convey the consecutive live pictures during the development to the remote client site.

Kishan Kumar et al. [3] depict item following robots, if can be controlled intelligently through voice, can be of gigantic assistance for the physically impaired individuals. In this paper, we attempt to actualize a voice-controlled item following robot. A discourse acknowledgment framework is utilized to perceive a lot of predefined directions, for example, forward, in reverse, left, right and revolution at a specific turning edge. The robot explores its way according to the voice-order signal, while likewise following the ideal article. The voice-order sign preparing is completed continuously, utilizing an on-time cloud server that changes over it to content structure. The order signal content is then moved to the robot by means of Bluetooth system to control its differential drive. The model keen robot comprises of three sub-frameworks: discourse acknowledgment framework, object following framework and the differential-drive based development's control framework. The exactness and proficiency of the discourse acknowledgment framework is analyzed through a lot of investigations. The impact of elements, for example, commotion and separation and so forth are analyzed, with empowering results. The model robot can perceive the voice-directions inside a Bluetooth run, i.e., 10 m. Potential augmentations are additionally talked about that could prompt a wide scope of further applications.

B. Raghavendhar Reddy et al. [4] depict for as long as quite a few years, architects have handled discourse for a wide assortment of uses going from portable interchanges to programmed perusing machines. Discourse acknowledgment diminishes the overhead brought about by exchange specialized techniques. Discourse has not been utilized much in the field of hardware and PCs because of the multifaceted nature and assortment of discourse flag and sounds. Notwithstanding, with present day procedures, calculations, and strategies we can process discourse flag effectively and perceive the content. In this venture, we will build up an on-line discourse to-content motor. The framework gains discourse at run time through a mouthpiece and procedures the tested discourse to perceive the articulated content. The perceived content can be put away in a document. We are building up this on android stage utilizing shroud workbench. Our discourse to-content framework legitimately secures and changes over discourse to content. It can enhance other bigger frameworks, giving clients an alternate decision for information passage. A discourse to-content framework can likewise improve framework openness by giving information passage alternatives to visually impaired, hard of hearing, or physically impeded clients. Voice SMS is an application created in this work enables a client to record and change over spoken messages into SMS instant message. Client can send messages to the entered telephone number. Discourse acknowledgment is done by means of the Internet, interfacing with Google's server. The application is adjusted to info messages in English. Discourse acknowledgment for Voice utilizes a strategy dependent on shrouded Markov models (HMM - Hidden Markov Model). It is presently the best and most adaptable way to deal with discourse acknowledgment.

Kiran Kumar Lekkala et al. [5] depict Proportional Integral Differential (PID) input frameworks are known for their vigor, exactness and dependability. These frameworks are utilized in a wide assortment of uses. In this paper, we investigate the likelihood of utilizing a PID design in mechanical 3D route frameworks. The framework created can be actualized for mechanical applications that require high exactness of developments along the three measurements. The exactness of developments might be required with reference to the client controls gave, for instance in unmanned or self-governing driving frameworks, which thus require Artificial Intelligence techniques to give the yields to such an extent that it accomplishes accuracy. An exploratory 3D exactness robot is created, in which the PID calculation is executed. The consequences of tests led, affirm the viability of PID controller in accomplishing the high accuracy of mechanical developments in three measurements.

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III. PROPOSE SYSTEM

The robot body was arranged precisely and electrical parts were picked to be appropriate to be utilized as a mechanical arm. The robot is controlled by utilizing NodeMCU as the brain of the robot, associated with Mobile Application through web i.e. inbuilt WIFI. NodeMCU is an open- source gadget, simple to-utilize equipment. The movement of the robot is controlled by giving the input in desired direction of movement of the robotic arm and then the robotic arm will respond to the particular movement that has been inputted. In this project, web server is used to make the user interfaced and will access the robotic arm via the internet to control it.

IV. CONCLUSION

Propose system will control Robotic Arm from android mobile app with different types of inputs like voice input, hand gesture input, phone tilt input.

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