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Mobile Controlled Agricultural Device for Enhanced Execution of Farming Techniques

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Abstract

A Multitasking robot for the field of Agriculture has been studied in this research. The whole process used in this research is based on DTMF (Dual Tone Multi-Frequency); GSM module; thermal sensor; sound sensor, flex sensor. The technology that has been implemented here is for expelling there toil level which they face for the aspects of distant farming. The device as based on DTMF has higher coverage area and is also cost effective, for being adaptable to any weather it will have a plastic fiber body. With the advancement in its properties this bot can be taken to a broad implementation.

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1. Introduction

The branch of a robotics is the base root of advancements in today's technology by the help of which we are able to put up our thoughts in working condition. A combination of different technologies can be tied up together for making a more advance system and so it is done in this research. Being easily adaptable this bot is and will be the most important aspect of advancement in present and future world. The acceptance of this bot for our society arises because of the easy available technology implied on it. On the concern of this bot it is basically a farming robot which can be used by user as per his requirements with timely modifications which is because of bot's capacity for logic conclusion as well as its abstraction power.

While the one of the advantage in this bot is the easy connection to the bot from any part of the country because the bot is activated by the technology of DTMF. The actual utilization will be by the farmers which usually not able

to watch out their farming lands frequently. Earlier work includes [1] the work of Blackmore, S., Stout, B., Wang, M., & Runov, B. who developed an idea of the advancement in mechanization for the field of agriculture. Also [2] Jagannathan Kanniah, who developed an obstacle avoidance mobile robot with an inevitable accent towards the game version. As well as work of [3] Fong, T., Thorpe, C., & Baur, C who take initiative on the advanced interfaces for vehicle tele-operation: collaborative control, sensors working. [4] Sarig, Y. (1993) who initiated and developed the technique of sowing and harvesting the crops [5]. Yun Chan Cho, who worked on developing a Remote Robot Control System based on DTMF of Mobile Phone. [6] Zungeru, A.M whose work was on A Simple and Reliable Touch sensitive security System. Also the consideration of work of [7] Takeshi Yamada and Narimasa Watanab both of them worked on the voice detection technique for the non-speech models as well as for HMM composition.

Our work provides a benefit here i.e. we have reduce the load of farmers as the robot is multi-tasking so that whenever the bot will be activated it will start its movement in the borders of the farming premise and this is possible because of the concept of DTMF .Now whenever the bot has to be shut down the same concept of DTMF is to be applied. In this manuscript, we are controlling this robot by the help of DTMF as mentioned above, GSM technology [9] for forwarding the warnings to the farmer in the format of text messages in his cell phone .Also the sensors like sound sensor for avoiding the infiltration of aerial animals like crow etc.; i.e. The play of a noise on bot if an audio player as the sound sensor is activated. Also flex i.e. Pressure sensor for the sensation of any pressure on bot if any one tries to stole the robot and thermal sensor for detection of any pests or insects like mice The bot runs on the H driving technique by attachment of 12V battery and the whole microcontroller is working on the attachment of 5V battery whereas the different modules have different attachments of battery source mechanical attachments etc.. As the system is supplied with 5V. Whenever there will be infiltration the bot will start moving to that location and thereafter it will scan for images and if the result will come positive than it will send the location through GPS [10] and text the prior saved message to the operating switching device.

2. Overview Of The Technology Used

2.1. Pressure or Flex Sensor

The Flex or Pressure sensors are analog sensors used for sensing the amount of pressure .They work as variable Analog Voltage Divider bending. Inside this sensor there are carbon resistive elements within a thin flexible substrate and whenever the substrate is bend than according to the bend of the substrate the analog voltage varies .Their main function is to convert the change in bend into electrical resistance i.e. more the bend more is the resistance values. They can be made unidirectional or Bi- directional depending upon the user needs. The diagrammatic circuit of this sensor is shown in Fig. 1.

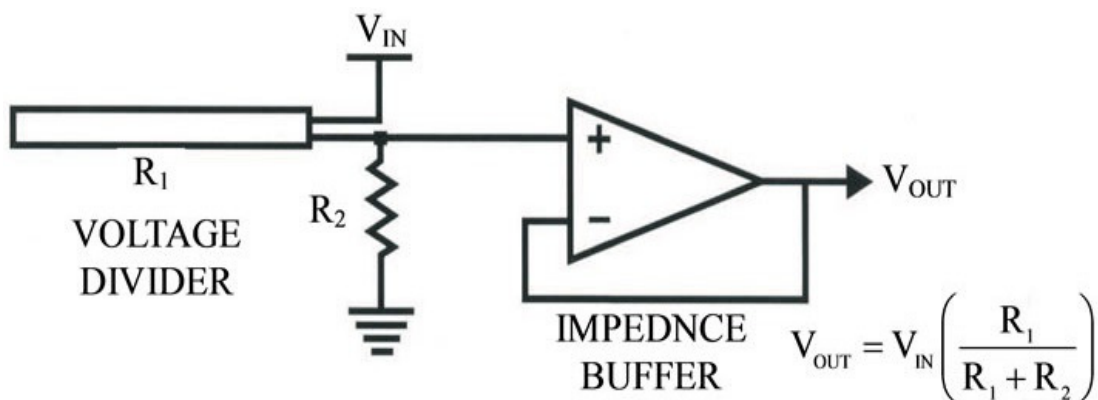


Fig. 1. Flex Sensor Circuitry

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