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3D Robotics Ultrasound Scan Machine For Multiple Task

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ABSTRACT

Treating patient online or with robotics ultrasound machine is common now a days.The purpose of research is to find a patient pain by sensor of probe in ultrasound machine and get the graph or image of result.This image is connected online to patient and treat them remotely or wirelessly when patient is not present.One any application is used to connect with patient and patient have receiver or wireless equipment.Digital stethoscopes is used to monitor audio and visual recording and send tto doctor online or physically.Doctor examine the patient andand compare two cycle of ultrasounds and treat with medicine or by instrument of another robot.Scanner is used at the tip of robotic arms to diagnose the disease of all kind in one ultrasound machine.The intensity is controlled with respect to temperature and frequency range.

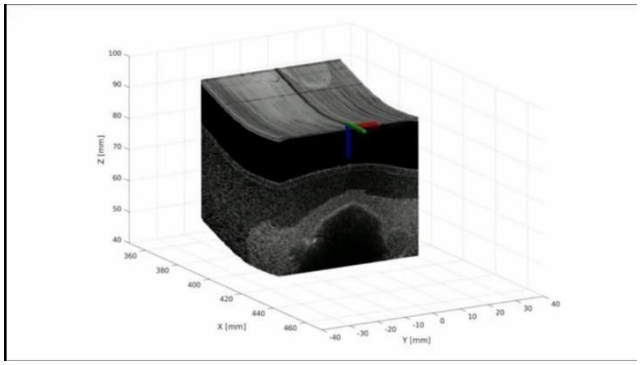
Keyword: *TELEROBOTIC SONOGRAPHY ,H5C CONVEX WIRELESS,MGI TECHNOLOGY*

INTRODUCTION

Telerobotic sonography is common now a days for examine the patient randomly whole the body.The probe of any measurement is used by fixing it scale to measured axis.The probe has its sensor to investigate the issue in a human body and send to reporting machine from where doctor able to seems the result in graphical way in standard from and then suggest a medicine for treatment.In some other cases robotics check and ultrasound the patient and prepare a report by entering data in to ultrasound machine and take print out from scanner.It can also take from home or online treatment by using omni.The intensity and frequency can be controlled according to need of treatment.Pulse recognition can recognize by doctor by taking multiple scans or desired organs.

The machine equipment continuous deliver result on screen by touching scanner on body organs.Abeep shows on the scanning machine when recognize an error or problem in a human body.It can also be diagnosed from omni or googles by detecting human tissues on camera by sensor in a probe.When probe is inserted in gel ,it contract the tissues and give a perfect calculations of morphology of a part of a body.One hand of robotics is used to monitor from probe or sensor and another is used to treat a patient what they need.The graph indicates in 3D in a body smoothly the flow of tissues.The crack or non moving tissues or damage with non working tissues can be detected through sensor in a color graph.The another robotic arm is used to treatthe body as received a command from first robot and machine.Wireless machine can send information of human body from one room to another or from one place to another.If human have wireless equipment at home,doctor can check from machine to deliver the instruction for treatment.The speed of monitoring and tissues collision can be treated fastly by radiations and graph with respect to time.Two scanning machine is placed in parallel form and linked with RF transmitter and receiver that can help to transmit and receive signal from human body.The blood pressure ,time rating and heart beat is recognized similarly at the same time.The report can be changed

and reversed by machine instructions keypad for low or high blood stream as we move the probe.The datsset software is used to assemble data and records in a machine which can be print as we need.The robotic arm can also be insert injections with required chemicals and medicine,The robotic arms can also take ECG graph and handle in a very nice way.



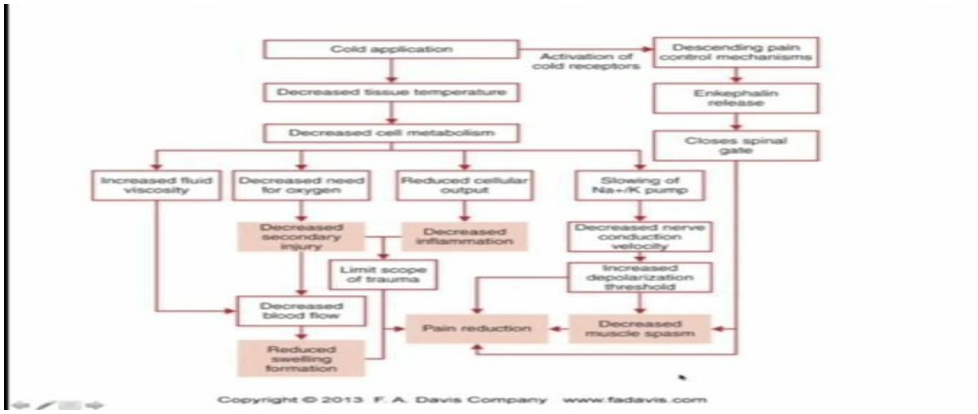
Multi Purpose Telerobotic Ultrasound Solution

The system of ultrasound is used in different disciplines like obstretics,pediatrics,radiology,cardiology,urology and gynocology is well designed with simulation image on real time access along with diagonisis area and management skills of report.This research include multi system in one set to save our time which is helpful in patient relief instantly.The robotics based machine is used its arms to move a probe in specific area or patients to diagnose the disease.It is like MRI but more flexible because doing all task through one ultrasound machine and no need of settings for every time.The doctor perform outsode or from outer cells .Base machine used for high frequency to update the result.and to control the slave.The whole system controls organs,tissue or blood flow inside the body.The operation can be done from another room or place or from online appointment from home.When the person take off or stand in a table,the robotic ultra sound machine contain camera and capture the environment by stereoscopic camera and sense the patient body that what is the problem in specific area.Area can also be define by moving stereoscope around a body and where machine give information about problem then detect the patient issue.

The doctor put on special glasses to resemble with camera and read signals from report.The doctor can also operate the robotic hand if patient tell him that I have issue in this area.It means it is used as a haptic machine.The probe or arm of robot cane be single probe 3D transducer from which different tissues and architecture is shown in clearable colour in a scan machine with good image quality and resolution.M-mode and B-mode and A-mode define in a good axis of view.QSONO D8 wireless pocket ultrasound machine can do task to appoint doctor at home or remote work from home online.MGIUSR3 ultrasound machine is suitable for this task as define in start of this link.Remote ultrasound machine is most convenient now a days which can give complete echo system of internal tissues and muscles.The doppler can also show some information regarding to tissues and power flow or spectural doppler.

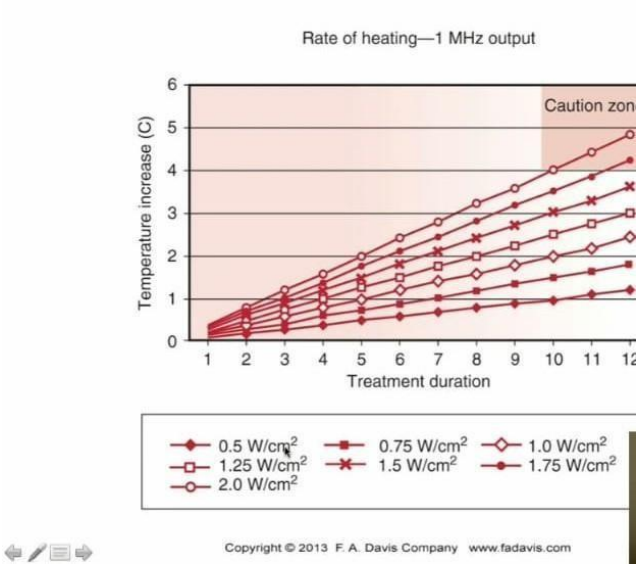
ULTRASOUND MACHINE GRAPHICAL REPRESENTATION

The transducers can be used of different frequencies for deep penetration.The frequency depends to show the diaphragm perfectly.The resolution mode is is suitable with frequency .The transducers have different resolution of arrays which scan together and set the phase of angle and edges.The image orientation controls system in transverse and sagittal condition.The artifects mirror shows sound or beep when contact to image transition and visualization.The well monitor system show on either vertical or horizontal graph sequentially to diagnose the problem or in long position and horizontal position with number of pixels and their rotation in white and black color or grey scale.

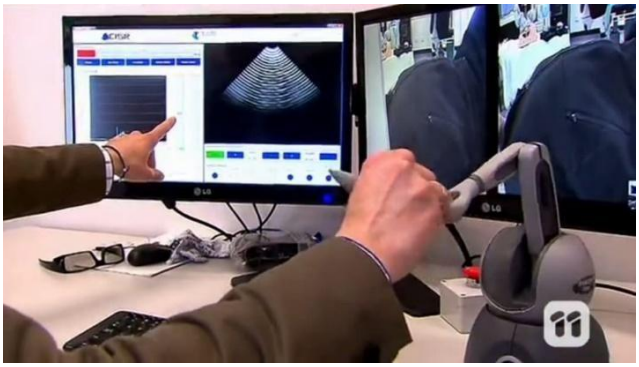


Clinical Application of Ultrasound Robotics

Application depends on the mode and maintanence in which ultrasound machine will work.If the operational area is wide then divide it into two sections.Transducer apply directly to the skin with gel between the head and skin.The another method which used before in this paper is that sensor with camera sense the effected part of the bod aand take a picture to handle the disease or pain.In many research robotics is used for treatment or operation in which grip is used to handle scissors or instruments and depth and rate of heating for massage or treatment.Intensity and duration is measured by machine and save dta as graphical representation which is save dfor future investigation.The use of electrical simulation and ultrasound.The setup procedure depends on hand of robotics movement connected with ultra sound machine of showing scan and graph is connected to internal part and external part combinely.Sometime two robots is used in which one is used for scan and other is for treatment.Both hand or arms is moved with its degree of freedom or maintain the axias of rotation.Many robots contain screen on its head to monitor scan report and save it and no need to do it seperatley.Slowly increase or decrease the intensity of ultrasound will maintain the pain of patient due to effect of radiation in tissues.



Interfacing Platform



The robot interface human body in such a way that make it easy to monitor and diagnose an issue.Online treatment is similar like physical presence by taking patientin video call and wireless robotic ultrasound system which is at home of patient deliver all information of patient by body scanning or where problem occurs.It can also be deliver to human home after receiving address or one physician can also go there for check up or human can take it at home.Once doctor monitor a human body,graphical representation of ultrasound will be received.and human can monitor in a sensible manner.The robotic arm made report and send to human home.For further checkup or medicine delivery,doctor will contact to human on call.It can be done remotely through transmitter and receiver and human have some ordinary phone and instruction machine at home.The edit in a report can be made through omni by group discussion or parallel data instruction set machine.The pixels in an ultrasound machine in a random manner can be simulated in a fixed direction to read the mechanism.Once diagnosis,doctor guide with instruction on video call for treatment or tissues can be treated wirelessly or remotely by sending radiations to recombine neurons or delete neurons to generated new one.To correct the neuron adjustment there should be a number sequence or data bit to send signal to human body which behaves like laser or adjust the tissues and muscles of human body.More medicine is to be deliver through proper manner and take hourly report by patient and echo system will be monitor in continuous manner.Robot arms filled with instructions in a brain and make it possible to handle RF receiver and transmitter with code data set handling.

Current Research

The Robot Operating System (ROS) is a set of software libraries and tools used to build robotic systems and applications. The current long term service version of ROS is ROS Noetic. It is the 13th and latest distribution release of Robot Operating System (ROS1). It was released on May 23, 2020 by Open Robotics, the developer of ROS. It will be supported for 5 years until May 2025. In the future, all the official effort will be put into developing ROS 2, which is a major rewrite of the ROS framework.

ROS Noetic is mainly developed for Ubuntu 20.04, so Ubuntu is the recommended Linux OS for installation. This tutorial explains how to install ROS Noetic from source on the Raspberry Pi OS and how to connect your LiDAR to Raspberry Pi 4 Model B using ROS Noetic middleware. It's not hard, but it will take a long time to compile everything.

In the future study is going to try to investigate the use of GPS technology for stream travel time estimation under Turkey traffic conditions. In this case, some comparable or differences can be found between two technologies such as Bluetooth and GPS. After all, companies like Waze, TomTom, and Google are already able to provide city and country level traffic condition using GPS and other sources of data. For this reason, comparison is made among all technologies for travel time estimation under different conditions.

Today, the LabVIEW platform offers a flexible, fast, easy-to-learn, and complete image analysis infrastructure with various useful modules. For this reason, in this study, a method analysis for color perception with a simple USB webcam and software developed for real-time color analysis on the LabVIEW platform is presented and its success in the basic color analysis is tried to be revealed. The basic application developed for this purpose in LabVIEW v2019 using NI Vision Development Module v19and NI IMAQ v19 modules.

CONCLUSION

The mentioned algorithm is little bit difficult to design but Its gives perfect output and simulation for self driving system.Moreover researches are not so much established regarding to that so its new idea to control robotics in the field of information technology.Models number can be change with respect to need of technologies but main phenomena is defined here.

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