LITERATURE SURVEY

TOPIC:

A Gesture based tool for Sterile browsing of Radiology Images.

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TITLE:

Literature Survey on Hand Gesture Recognition System.

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ABSTRACT:

For those who are deaf and dumb Sign language is an efficient alternative way for talking, where we can understand them by using the hand gestures. For humans hands are a part of human organs which is used to manipulate physical objects. For this very reason hands are used most frequently by human beings to communicate and interact with machines. In the recent generation, hand gesture recognition system is improving in such a way that the interaction between the human and machine is advancing by using the electronic gadgets such as mobile phones, computers etc. So, there will be advancement not only in representing the speaking skills, also writing skills too. The real-time continuous gesture recognition is based on posture, position, orientation, and motion or by using the embedded systems like microcontrollers or it can be color maker approach, glove-based approach, vision-based approach and depth-based approach. The technique used in this system is that the input to the system will be given from the hand. They detect the image of the hand and pre-process it. Later on, they are going to crop the image how much they require for the analysis. In later stages they are going to extract the feature of the hand and then they are going to classify it. At the last the gesture is converted into the speech. According them hand gesture recognition system provides Human Computer Interaction. The two major applications they have used is Sign Language Recognition and gesture-based control.

INTRODUCTION:

The most critical of all in today's life is communication- the way to rad and write. The way of communication in which any type of body movement is involved called Gestures. Gesture recognition is the mathematical interpretation by a computing device. Gestures are expressive, meaningful body motions involving physical movements of the fingers, hands, arms, head, face, or body. There are many kinds of expressions of human movements, the common one is the expression of gestures. In other words, Gesture is non-vocal way of communication which uses hand motion, different postures of body,

face expressions. Gesture recognition based on computer vision has gradually become a hot research direction in the field of human-computer interaction. Sign language is the most expressive way for the hearing impaired, recognizer must be able to recognize continuous sign vocabularies in real-time. Gesture recognition based on attitude sensor is an emerging field of pattern recognition research. Experimental investigation proves the performance and high accuracy of any proposed device. Normal way of using hand gesture recognition system is when we give some commands to our system by hand gestures the machine first captures our command as an image then compare this with database and if any image found in database then task assigned to that will be performed. Normal way of using hand gesture recognition system is when we give some commands to our system by hand gestures the machine first captures our command as an image then compare this with database and if any image found in database then task assigned to that will be performed. The most critical of all in today's life is communication- reading and writing. They feel communication medium difficult because they cannot access the computer. In some paper they have used Braille script for reading and writing purpose, which cannot be interpreted by the existing computers. The six fingers represent the six dots in the Braille. Few papers have focused on Human Computer Interaction (HCI). In some times they have used Braille script for reading and writing purpose, which cannot be interpreted by the existing computers. The six fingers represent the six dots in the Braille. A smart camera can be defined as a vision system which produces a high-level understanding of the imaged scene and generate application specific data to be used in system. Mono-vision based skin color segmentation techniques are used for segmenting the hand form a complex image sequence. The standard histogram features along with various geometrical features are extracted. Some papers they have used End-Point problem to determine the end points in a gesture input sequence.

TECHNIQUES AND ALGORITHMS USED:

The radar operates on 60GHz and utilized Range Doppler Map algorithm to acquire the velocity and range of different movement and fulfill hand recognition. Also, they have used soundwave technologies like loudspeakers and microphones embedded in the computer to recognize the hand gesture. They have considered Decision based tree algorithm which classifies the original signal they have considered into four set of gestures. This gesture recognition is been described in such a way that for gesture detection we are going use hand pushing, hand pulling, hand lifting and hand shaking. F. In this method they have discussed about the features of radar that are helpful for gesture recognition and perform effective gesture recognition using the features determined through this feature selection analysis. They introduced a method called feature-based gesture recognition in a frequency modulated continuous wave (FMCW) radar. From this method we obtain a raw signal of FMCW radar and generate a variety of features from the RDM. The features are broadly defined so that they can radar-specific characteristics as well as statistical values commonly used in the machine learning. Some of these radar features are highly connected with the Gesture Recognition and are selected by the proposed feature selection algorithm. This selection algorithm which is a wrapper-based feature selection algorithm incorporated with a quantum-inspired evolutionary algorithm (QEA). The algorithm's information factor is based on the minimum Redundancy Maximum Relevance (RMR) criterion and is applied to QEA to get the feature subsets effectively. This introduced algorithm is able to extract all the forms of feature sets from all the feature subsets related to gesture recognition, and it helps in improving the gesture recognition accuracy of the FMCW radar system.

CONCLUSION:

In this paper we have studied the various method of gesture recognition. Hand gesture recognition system is considered as a way for more intuitive and proficient human computer interaction tool. The range of applications includes virtual prototyping, sign language analysis and medical training. Also, we have identified how to classify the non interest images and interested gestures from the taken actions or images, inertial sensor are used to identity the gestures. In this paper we have discussed about the End-Point algorithm and also few techniques of it is Mono-vision technique. Each of them performed all the hand gestures.

TITLE:

Systematic literature review of hand gestures used in human computer interaction interfaces

AUTHORS:

ADEEN, H. S., ATIA, A., AMIN, A., VICTOR, A., ESSAM, A., GHARIB, E. & HUSSIEN

PUBLICATION YEAR:August 2015

ABSTRACT:

There are three sub-types of iconic gestures: those that describe a shape (Pictographs), those that represent a spatial relation (Spatiographic), and those that describe action of an object (Kinematographs) (Rimé and Schiaratura, 1991). Metaphoric gestures “are iconic gestures which represent abstract content” (Wagner et al., 2014, McNeill, 1992), e.g. a cutting gesture to indicate a decision has been made (Casasanto and Lozano, 2007). They “sketch in space the logical track followed by the speaker's thinking” (Rimé and Schiaratura, 1991). Modalizing symbolic gestures primarily complement speech, but can also complement other means of communication

INTRODUCTION:

According to the PRISMA statement (Moher et al., 2009). Hand gestures are a non-verbal method of communication using the movements of the human hand. This method is used either on its own or with another parallel communication method such as speech (Adam, 2004). The movements of a hand on the air as shown in Fig. 2 (Rosalina et al., 2017), is an example of a sign language using hand gestures. The representation of hand gestures is varying from reflecting a certain action to delivering a message that actually has a meaning (Adam, 2004). Hand Gestures are considered to be culture dependent, which means one gesture can range from giving a complimentary meaning to a giving a highly offensive meaning (Adam, 1994). Hand gestures are widely distributed on different kinds of applications, ranging from applications that are connected to the safety of humans, such as using hand gestures in controlling and directing flights operations (landing and taking off), to applications that are made for pleasure purposes, such as using it in gaming.

TECHNIQUES AND ALGORITHM USED:

To conduct this systematic review, we have screened 560 papers retrieved from IEEE Explore published from the year 2016 to 2018, in the searching process keywords such as “hand gesture recognition” and

“hand gesture techniques” have been used. However, to focus the scope of the study 465 papers have been excluded. Only the most relevant hand gesture recognition works to the research questions, and the well-organized papers have been studied.

CONCLUSION:

The paper will discuss the gesture acquisition methods, the feature extraction process, the classification of hand gestures, the applications that were recently proposed, the challenges that face researchers in the hand gesture recognition process, and the future of hand gesture recognition. We shall also introduce the most recent research from the year 2016 to the year 2018 in the field of hand gesture recognition for the first time.