A Study on Giving Commonsense to Machines

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Abstract - *Nowadays we are totally dependent on machines for each and every work. These machines are being programmed and functioned manually, but we must allow the machine to think on its own, this is done by giving common sense to machines. We must use some of the embedded systems and separate operating systems to control human gestures, and some sensors such as microphone, VOIP sensors to record the voice and hand gesture recognition using accelerometer sensors. In other words whatever we tell ,the machine should understand. In this paper we try to discuss how this concept can be implemented to machines. This can be further inculcated to develop fully automatic independent machines, which tries to think on its own when given the input. This totally works on the concept of Artificial Intelligence. There are various aspects where this can be further developed by designing the flowcharts. In this paper we also give some paradigms where we can use this concept so that it can be easy to work with machines. Basic common sense is key to building more intelligent machines [1, 4].*

***Key Words*: Embedded systems, Commonsense, VOIP sensor, Accelerometer sensor, Artificial Intelligence.**

1. INTRODUCTION

Artificial Intelligence is a fundamental theory and development of computer systems able to perform tasks normally requiring human intelligence, and thinking such as visual perception, speech recognition, face recognition, decision-making, and translation between languages. Nowadays the voice assistance what we use in our smart phones like "Ok Google" mainly works on AI and furthermost the concepts such as Image recognition, Speech Recognition also works on Artificial Intelligence. [7]

Now the next question that occurs in our mind is how can we do this, what are the strategies used in this?

And first of all how can we build machines with 'commonsense', the cognitive skills that every ordinary person takes it for granted? In this paper, we describe a common sense reasoning which is in the development stage through understanding some rudimentary flowcharts and some transition states of the flowchart. The system reasons the kinds of fundamental entities that show up in nearly all situations such as individuals, objects, occasions, objectives, plans, and slip-ups. We first describe the main features of our idea and then discuss its application and evaluation to an artificial life scenario. [4]

1.1 Existing

This can be done with the help of Machine Learning where the computers are fed with the inputs, can begin, on its own, to see patterns and leads in these information, and figure out how to perceive and arrange new information as they arrive into the patterns and rules that the computer has already created. After this these data are piled up and stored in a large database of a computer having its own rules and regulations making it more dependable [8].

1.2 Proposed

It our Idea as to how new types of future machines can be developed as shown below. Where we have briefed some ways how this concepts can be implemented to the real time application.

Some of the paradigms of automatic common sensing machines are as follows.

The first scenario is in our rooms where the moment we return from our work we will be sweaty or shivering of cold due to outside temperature and of course one of these. There are some automatic AC's which are hung on the wall where it will detect our body's humidity and set the AC according to our body's temperature. Some thermal sensors are attached to that so in order to detect our body temperature. If in case our body temperature is low, then AC is set to the little more than the room temperature which would be suitable to his body temperature and opposite in the case when the body temperature is high. Secondly what we are working on right now is the common sense.

Let's try to induce common sense to Dustbin and make even that to have a sense too.

2. HOW DOES IT WORK?

Well a lot of common sense is required though, initially there are way too many dustbins in the world but our dustbin is a way too ahead.

In the past days when we wanted to dump anything we used to go near the dustbins open it up and then we used to drop the waste there, but still as of now we still have to move near the dustbin. But we induce common sense to it, then only if we move near the dustbin the dustbin should not open if in case if we have something in our hand it will sense it and opens .But there is an important thing here now, the dustbin thinks that whatever is in your hand as garbage so it blindly opens for everything there are some strategies to be followed. For instance we have to bring our hand near it, the

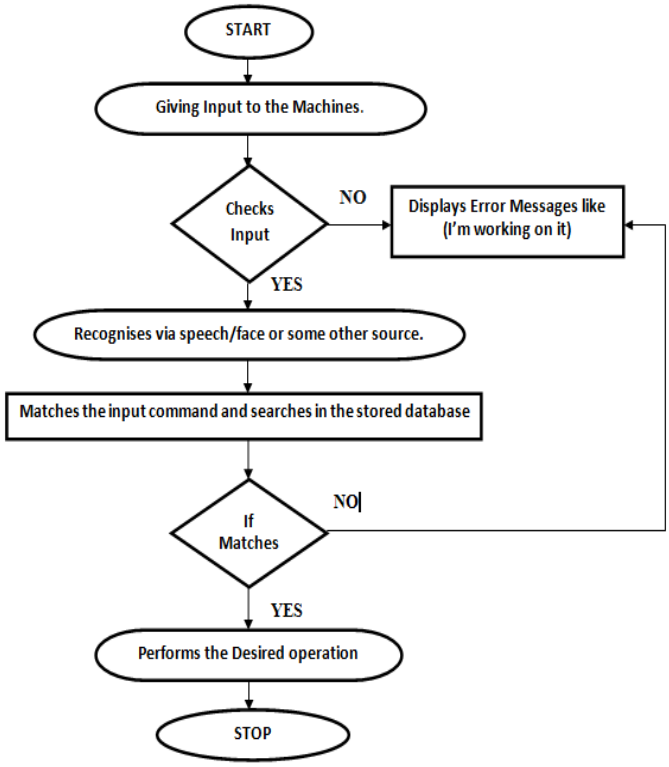
point is what's there in your hands do matter a lot. Whether good or bad things matters a lot. Choice is whether you want to throw it or not.

Figure 1. Advanced automatic Dustbin

A brief description about the diagram. As shown in the Figure 1. Well, it consists of a well equipped dustbin with embedded sensors to detect the input. And a lid on top, it's quite obvious and depends on the user's choice whether it is needed or not .In this case we use a lid just to make things simple. We don't have to perform some extra things nevertheless just keep the hand above it ,There is no need of even touching it to be more precise its commonsense and it has a sensor.[3].

2. 1 FLOWCHART AND DESIGN.

The Flowchart Below depicts the following working of any machine which works on the basis of common sense. Here including start and stop there are additional of 7 states as follows



The States are

1. Giving Inputs to the machines: This state involves various types of inputs given by the user to the machine be it the Hand gestures, through voice modulated commands and many more…

2. Checks for the Valid or Invalid one: This state involves evaluating the inputs whether is it a valid one or not. This further consists of.

2a.If at all the input is valid then it recognises the speech via speech or face recognition
2b.If in case the input is invalid one then it displays a suitable message stating that it is working on it.

3. Matches the input command and checks it in the stored database: This phase as the name suggests checks the command whether is it stored in the database and performs the operations according to it.

4. If the Command matches: then it performs two cases further.

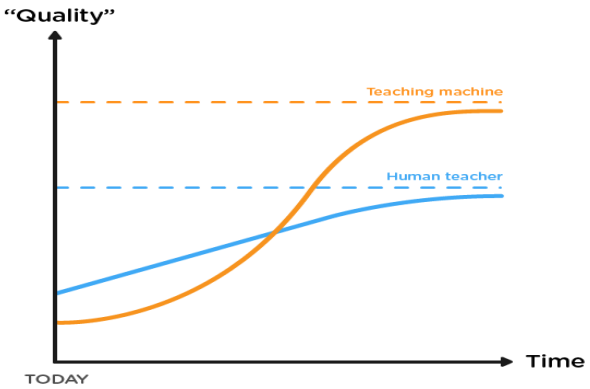
4a. If matches: Then it performs the desired operations that meet the user requirements.
4b. If No: Then it returns to the case 2b and displays the suitable message.

Most of the people think is it required. Whether the common sense must be given to the machines or not or some are even confused. Well the answer is now we are Presently in the midst of 2017 and as we can see slowly the things are becoming automotive such as the robots painting the car in the assembly lane, Drilling etc. Robots in the present have been a great asset because they can perform jobs that are too risky for humans. [6]

Later on benefit robots are relied upon to outperform the mechanical Robot showcase. Numerous makers are beginning to investigate fields that are inadequate with regards to specialists. One zone of intrigue is creating automated aides for the elderly. You may likewise observe real employment of apply autonomy in law authorization and security. Future robots could likewise be as little as a PC chip and embedded into apparatuses, for example, vacuum cleaners.

If this further continues then one day everything in this world would be automotive like automatic cooking machine the moment you return to home from work it will sense your hunger and prepare a dish for you, Ambient Light system is when u enter into the room automatically the lights will be turned on or off .This is how in further these machines will be dominating the world.

2. 2 GRAPHICAL REPRESENTATION.



As shown in the graph the machine is a lot more ahead than the human .It is so believed that when we teach a machine to perform some operations the better results can be obtained compared to that of a human being on the graph it takes a lead, and even the quality of the product developed by the machine would be a lot more better than human being.

So overall teaching a machine gives a lot more sense that teaching a human .The reason why human beings are losing the race because they become lethargic, and often feel bored when doing the same work back and forth. Due to this the efficiency decreases, but on the other hand the machine never feels bored unless and until the work is finished it keeps on doing its work and surprisingly it never takes a break unless it has to do so. And the speed matters a lot because the machine works at very great speed when given the input compared to man.

3. ADVANTAGES

- It makes life simple by carrying all the tasks
- It is very user friendly and easy to use in terms of all aspects.
- Communicating with humans in a simpler way.

4. DIS-ADVANTAGES

- It is a bit cost effective.
- Understanding the working of the machine.

Let me give an example "When you are conceived, you don't know anything." But as the days go on and on we try to learn some rudimentary things through cognitive thinking, [5]. Actions which our parents do, and also through their conversation. In the same way the machine must be built first and there in the development stages through image processing it will try to identify the images and their purpose so when the user provides some input at the same time the machines tries to think which image is what and what must be done next as shown in Figure 3. So there will be something known as visual cortex which is one of the important Aspect in the machine which provides the ability to think. Where there are some preliminary steps or you can also it as an Algorithm. [2, 3]

1. **Recognize the input**
2. **Process the input**
3. **React to the input**
4. **Perform operations according to the necessary Steps.**

5. CONCLUSION

The proposed system can be used to achieve simple and tedious tasks through normal human interaction. The commonsense to machine is growing to such to such an extent that even Face book; Microsoft is trying to implement it. As indicated by the current review Face book AI look into a mass chief Yann LeCun, jumps forward in neural systems administration and machine vision might one be able to day prompt programming with the presence of mind. Neural systems are simulated frameworks which imitate the structure of the human mind and by consolidating this with further developed machine vision which are approaches to pull information from symbolism for use in undertakings and basic leadership - LeCun says good judgment will be the outcome. For instance, on the off chance that you have a prevailing article in a picture, and enough information in protest classes, machines can perceive particular items like mutts, plants, or autos. But I promise this field has a promising future at great heights.

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