Artificial Intelligence and the rise of e-brain

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Abstract - *The world as of now has become way ahead of its technological advancement curve from how it was back then. The advancement in technology has also generated the expansion in the area of Artificial Intelligence. In future, Artificial intelligent machines will replace and could enhance human capabilities in many areas, or could even be much more advanced than human brain. It has really enhanced the human life in many ways possible, most of it being used to solve unreal problems in the field of engineering, medical, science, whether forecasting, business, medicine etc.*

In the present era, Artificial intelligence could do almost anything except, there is always a deviation in every machine incorporated with artificial intelligence could take in. Artificial intelligent incorporated machines with cloud would considerably be the future of AI. Artificial intelligence has its flaw; it takes its decision according to the way its programmed. It still isn't as efficient and coherent as a human brain. Human brains could take choices from the number of available choices, so does an Artificial Intelligence. But, Artificial intelligence is programmed to learn from its own through means of Machine Learning. A single flaw in an artificial intelligence program could cause a chaos, when it adapts a wrong decision. Artificial Intelligence surpasses natural intelligence by being permanent, less maintenance cost, considerably less expensive and can run under high processing to perform certain tasks much faster and better than humans.

Key Words: Artificial Intelligence, Cloud Incorporation, Machine Learning.

1. INTRODUCTION

Artificial intelligence is playing an enormous role in the operational and scientific research area. The ability of an artificial intelligence program to collect data and information to solve complex problems being on an outstanding scale. In future, these intelligent program incorporated in machines may or could replace human instincts in many advanced areas. Artificial Intelligence is the study and incorporation of intelligent processing inside a system or a machine. These artificial intelligent machines could learn things on their own, adapting its surroundings. It could basically gather and process information more efficiently and effectively than a human brain, terming this program an "electronic-brain". The decision that the e-brain in favor, is based on the contrary that, it first takes an option from the list of the options available. Then it computes and process the decision based on the positive aspects and the negative aspects from more than a million probability of the decision taken could cause a conflict or chaos, and takes the most favored option as its final outcome. Thus, e-brain being the most complex and the advanced version of artificial intelligence, that can be incorporated in any digital device, it could be either a normal smartphone or any machine.

1.1 Machine Learning

Machine Learning is one among the applications of Artificial Intelligence (AI). The main purpose of Machine Learning is the ability to make the program dig knowledge and information and to automatically learn from itself and its surroundings. Machine Learning focuses much more on building programs that has the ability to access the data from a numerous internet sources and use it for themselves.

The Machine Learning process starts with observing the data, which is the user input model. It could be either direct experience from the Artificial Incorporated Machine or it could be any kind of instruction given by the administrator. These given inputs are often compared with the data in existence, and it looks for data patterns with similar data, and takes out the best decision from the given list of options, calculating both the positive and negative aspects of the decision it opts for.

1.1 Cloud Computing

Cloud computing is based on the internet computing that provides computing resources and data that are very hard to come in handy and are under demand. Sometimes processing hardcore and highly encrypted data needs sufficient amount of time to process and to do the works as required, involvement of super computers become necessary. So using cloud computing, access to super computers comes easy hand for processing the hardcore and encrypted data within a span of milliseconds. Main purpose of using cloud computing with this particular artificial intelligence program is to compensate the processing of data along with the speed. There are many new high end home automation artificial intelligent programs that uses cloud computing for its premium range less time consuming processing.

2 METHODOLOGY

Data in various form factors are analyzed and pre-processed to make decision that could sort by itself into the best possible outcome state. Artificial Intelligent Machine could improve from what it is now with the enormous ability to improve its decision making capability and natural language processing factor. Mixing Augmented Reality, Cloud Computing, Hybrid Database Systems (Internal Database and External Database), and Machine Learning, Natural Language processing system with Artificial Intelligent programs could enable in developing and making a new complicated versions of Artificial intelligence system that could understand the human ideology of thinking and could even communicate as one among us, hence terming it as the electronic-brain.
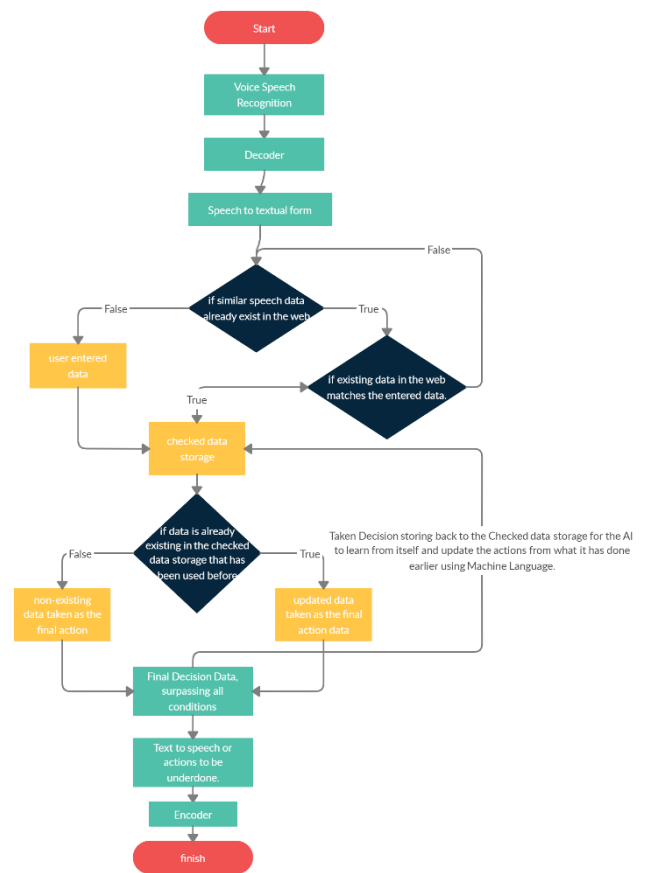

Figure 1 Representing the flow of Mechanism of the proposed e-brain working strategy.

2.1 Artificial Intelligence and Its Areas at present

2.1.1. Natural Language and Speech Detection: The ability of an artificially intelligent program to understand and respond to natural language (soft-spoken human language). It basically translates from the soft-spoken language to a textual form and then it translates to one particularly spoken language to another natural language and vice versa. Some of its capabilities includes.

2.1.1.1 Speech Recognition and Understanding capability.

2.1.1.2 Information Gathering and Retrieval process, and processing semantics (Computational Logistics).

2.1.1.3 Natural Language Translations.

2.1.1.4 Basic Questioning and Answering functionality

2.1.2. Ability to solve rigid problems: Able to form a data sequence structure and to formulate the problem and representing the problem to find a suitable and appropriate solution for the problem. Some of the capabilities includes.

2.1.2.1 Mathematical Problem solving.
2.1.2.1 Human interactive problem solving.
2.1.2.3 Autonomous searching.
2.1.2.4 Automated coding capability.

2.1.3 Robotics and Home Automation: It is a combination of the ability to rigidly do physical works such as humans. Ranging from switching on a tube light to even automate navigation in a transport which you would like to travel in. Some of its capability includes.

2.1.3.1 Transportation / Navigational Capabilities.
2.1.3.2 Household maintenance and user recognition.
2.1.3.3 Security systems.
2.1.3.4 Automated industrial development works such as making automobile parts and alignment.

2.1.4 Games: Most of the popular games such as Chess, Minecraft, and Cards makes use the artificial intelligence incorporated in it, to identify and tackle the user's choice of movements and give him a feeling of strong opponent opposing him. These Artificial intelligence accepts a formal set of rules, and then translates these rules into a representation of data incorporated structures, which allows for automated problem solving and to learn abilities to be useful in maintaining its tackle performance level.

2.2 Advanced Structural Architecture (ASA e-brain)

Here, in this Advanced Structural Architecture model of Artificial Intelligence, the basic decision making strategy is pinned down. The input is read in the form of data collected in voice samples or natural speech. The speech is then converted into textual format using converters, or it could be the data retrieved using any kind of sensors to get details about temperature, heartbeat etc. The input data is then send to the cloud computing platform to be processed and the data access its pre-processed state by comparing the input data with the data in existence. The existing data that matches or has a similarity with the input data is withdrawn from the list of available data, and then it

accesses the "Data Looping" state. In the Data Looping state, the input data and the similarly matching data are compared with one another to get to know the consecutive positive and negative aspects, that it could have an impact on. If there is a list or queue of similar data available that matches the input data, it gets compared one by one. All the existing data in queue that has been compared with input data and surpasses the input data is stored in a new queue and compared again. And the data that overcomes the rest of the data in comparison with its positive aspects is taken as a decision factor data. And it is reconfirmed and processed again in the Training model, where the final output will be sent back to user as the result of processing.
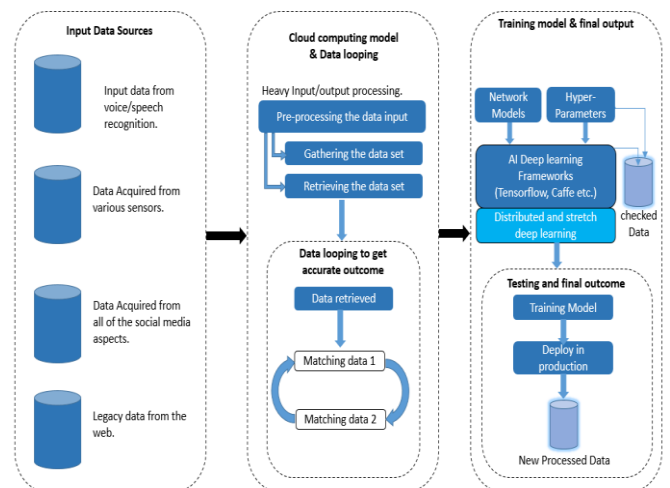

Figure2 Advanced Structural Architecture of AI e-brain

In the Training and the final output model, the chosen data from the previous state is checked using hyper-parameters and network models. Then the Artificial Intelligence Deep learning frameworks such as Tensorflow comes in play to understand the use of the data, and make the AI program learn from itself from its past activities, so that it becomes easy for the AI program to do the same activity at ease in another point of time being. The processed data which has underwent the Tensorflow and caffe framework is stored inside the checked data storage, for further reference of the similar data. The data stored in the checked data storage, tries to expand and learn from itself about the things the AI did in its previous activity and modifies itself to be the better version of itself. The

automated learning process is happening because of the Machine Learning Introduced within the AI program. The Program now tries to learn about the existing data residing in the checked storage on its own through the world wide web and other necessary sources make changes within the existing data, such as the wrong information given by the user will be crosschecked on the web and then replaces it with the actual factual representation with the false entered data by the user. This process is the main ideology behind the creation of an "e-brain", which is almost capable of thinking similarly to a human brain. The processed data after the Tensorflow framework now undergoes a sequence and series of testing and training modules to virtually know if there is any flaw within the final output data processing. The data is then set to deploy within the application or the machine from where the input request has been made by the user. Now, the data is then sent back to the user to be acknowledged.

3. CONCLUSIONS

The field of artificial intelligence and the advancement in its decision making capability allows the AI incorporated machines to think analytically and way ahead of a human thinking curve. Artificial Intelligence has contributed a lot to various areas in the last two decades, mainly in the automobile, IT, and medical sectors. And soon enough, artificial intelligence will continue to play an increasingly important role in various fields. This paper is based on describing the role of an Artificial Intelligent program called as 'e-brain', which is made to incorporate with any of the digital device that have access to web. The program basically outstands various other artificial intelligent voice assistant program with its decision taking factor. The program mainly outstands the existing models by looping the input decision with the similar kind of decisions already available in the world wide web. The input data will be replaced with the similar data that outshines the entered data with its positive aspects and comparing it with the scenarios where its applications come to use effectively. The taken decision is stored in the AI memory calling it checked data. The data stored in the checked data storage tries to learn and update

the data by itself using machine learning used by the artificial intelligent program. The data stored in the checked data storage, tries to expand and learn from itself about the things the AI did in its previous activity and modifies itself to be the better version of itself, so when the user ask to perform the same activity, the AI could perform the task with better efficiency and speed and in a more effective way, since the AI has done the same task before. We conclude that further research in this area can be done as there are very promising and profitable results that are obtainable from such techniques. While scientists have not yet realized the full potential and ability of artificial intelligence. This technology and its applications will likely have far-reaching effects on human life in the years to come.

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