Artificial Intelligence: Analytical Analysis of Main Aspects

Introduction

I have chosen this topic to throw some light on one of the most trending technologies these days are known as AI (Artificial Intelligent).In this paper I will discuss some of the important aspects related to AI which will help in a better understanding of Artificial Intelligent and both its advantages and disadvantages. This paper will also discuss some of the algorithms used in AI systems.

History of Artificial Intelligence:

It was first proposed by John McCarthy in 1956 in his first academic conference on this subject. The idea of machines operating like human beings began to be the center of scientist's mind .whether it is possible to make machines have the same ability to think and learn by itself was given by famous mathematician Alan Turing. Alan Turing was able to put his hypotheses by testing whether "machines can think"? After a series of testing, it is possible to enable machines to think and learn just like humans.

Description Artificial Intelligence

Artificial Intelligence is the field where we describe the capability of machine learning just like humans and it's ability to respond to certain behaviors also known as (A.I.). The need of

Artificial Intelligence is getting increased day by day. AI introduced to the market is the reason of the quick change in technology and business fields. Computer scientist are predicting that by 2025, "80% of customer interactions will be managed without a human". It means that humans simple requests will depend on computers and artificial intelligence just like we use Siri to ask about the weather. It is very important to adapt for AI revelation just like UAE have by installing a state minister for AI in Dubai.

Pros and Cons of Artificial Intelligence

AI offers many properties like reliability, cost-effectiveness, solve complicated problems, and make decisions; in addition, AI restricts data from getting lost. AI nowadays is used in most fields whether it is business or engineering. One of the important tools in AI is called "reinforcement learning" which is based on testing success and failure in real life to increase the reliability of applications.

Although Artificial Intelligence made our lives easier with different functions, such as texte umschreiben, and saved time than ever, scientists are afraid that by the huge dependency on AI humanity could extinct. Scientists argue that by having an AI machine, people will be jobless and that will result in losing the sense of living. Since machines are learning by itself and doing things more properly and in arranged and timely manner, this could be the reason of our extinction.

AI Algorithms and Models

AI is fully based on algorithms and models as a technique that is designed based on scientific findings such as math, statists, and biology (Li& Jiang, (n.d.)). It works based on several models such as: Ant Colony Algorithm, Immune Algorithm, Fuzzy Algorithm, Decision Tree, Genetic Algorithm, Particle Swarm Algorithm, Neural Network, Deep Learning and in this report, I will describe some of the most known models which are: Support Vector Machine, and the Artificial Neural Network.

Support Vector Machine (SVM) where it is used to build a classification model by finding an optimal hyperplane which is based on a set of training examples as shown in (figure A-1). It also have been used for pattern classification and trend prediction lots of applications.

Figure A-1 Describes how SVM algorithm being represented in AI

Artificial Neural Network (ANN) is a indicative model of understanding thoughts and behaviors in terms of physical connection between neurons. It has been used to solve variety of problems through allowing the machine to raise mathematical models to be able to mimic natural activities from brains . By using this algorithm, the machine will be able to find the solution of any problem similar to human’s brain.

Some Applications on Artificial Intelligence:

AI can be depict using lots of algorithms. These algorithms help the system to adamant the anticipate response which will basically tell the computer what to expect and work consistently. Below are some of the greatest AI applications that we are probably using in our daily life without knowing:

- Voice recognition
- Virtual agents:
- Machine learning platform

AI Design Models

AI application are present all over around us and in this paper, I will discuss some of the common application of AI that we meet nowadays which is Virtual Assistants such as Siri, Cortana...etc. Over the past few years smart assistants are becoming a very popular technology in most of the smart devices and most importantly, these assistants are becoming smarter every day. In addition to the incredible help they pledge us with, that every one of these apps has different features. It works according to the following phases: getting the data, clean/manipulate/ prepare the data, train model, test data, and improve the data . Before accessing the data, it must verify the quality of the data to ensure that it meets the requirement.

Siri Virtual Assistant:

Siri is the popular virtual assistant which uses voice recognitions and typed command in order to perform a certain work in a device. It is considered one of AI most used applications. This

application simply takes the input from the user such as (e.g. Call dad) and try to find the most parallel keywords used in this command. It tries to remove incompatible result through using the language pattern recognizer and from there to active ontology by searching through the contacts, then it will try to relate the contact which is named as “Dad” and will perform the task which in this case is “Calling” and finally the output of this action will be “calling dad” and to consider all the possible situations.

In another case the architecture of the virtual assistant is shown in (figure A – 5) as you can see the flow of the system starts by taking the input from the user, after that it will decide the conversation approach module to be used which is a response from the dialog management module, parallel a classification module response to an NLP module. Finally, by using the conversation history database it is used to analyze the knowledge base construction module which will response back to the domain knowledge based as explained in detail in (figure A- 5)

Figure A-5 Describes Proposed conversational agent architecture

Conclusion

AI nowadays is being used in almost every field of study in several models such as SVM and ANN. We should be able to proceed with knowing and understanding the consequences of every technological trend. In my opinion, we are in the AI revelation era and therefore; we should adopt into this change and welcome it .

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