Critical Thinking: Artificial Intelligence

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EDFS 309: Scholarly Personal Narrative Writing

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Abstract

Artificial intelligence has emerged, revolutionized information technology, engineering, and business. The dawn of this technique for computing problems and providing speedy and accurate results are essential to determine future aspects of business and economy. A critical analysis of possible problems and possible solutions is very necessary to tackle problems with efficiency. In this article, we will discuss the problems, their evidence, and detailed analysis of their impacts on the economy and business. Also, analysis of possible solutions to the problems to determine adaptability and feasibility of a particular technique based on problems and market requirements. The article analyzes the topic while taking the perspective of obstacles and hurdles in the path of adopting and implementing AI for a real and significant revolution.

Introduction

The paper is based on critical thinking by following PEAS framework. The framework works by carefully modeling problems and their solutions while addressing provided shreds of evidence and analytical reasoning. AI works by training computers using machine learning and deep learning processes using specified algorithms to enable fast computing and decision making. Governments and big corporations have started utilizing this kind of intelligence to improve business financially. The trend is increasing day by day as not only big multinationals are using this, but also AI-based apps are now in the pocket of an ordinary person. An extensive overview of possible problems and the related optimal solution is provided below.

**Problems:**

This section outlines possible problems that are found in the domain of artificial intelligence when it comes to its applicability in the industry. The article discusses 3 main problems related to business and management, which cause hindrance in AI implementation. The very first problem is about the main building block of AI, which is data handling. AI models require huge data sets for training, and the quality and availability of data is a central issue.

AI can do efficient learning and speedy analysis, but the requirement of relative algorithms is one limitation. As conventional computer systems work in binary using Boolean logic hence decision making power while mapping the human thought process is not applicable.

Further, the lack of AI understanding among management authorities and the presence of non-technical staff in big numbers is also an issue. In this case, AI finds it hard to get preference in business work for implementation.

**Evidence**:

Data is the main source, and as we have discussed, the availability of clean data is central to the further utilization for other purposes. Often data extracted from internet sources in labeled in the form of images, texts, and other notations due to IoT (Internet of Things). This constitutes structured data that can be handled and utilized without difficulty. But there is a huge amount of data that cannot be labeled due to the scarcity of enough people to label it. This is unstructured data and needs labeling to make it easily usable for implementation. Amazon Web Service is one example of a data stream having a huge amount of structured and unstructured data.

 Talking about the incapability of conventional computer systems to adopt AI-based algorithms is their use of the conventional Binary system. According to binary computation, computer systems deal with only two states, 0 and 1, which are not comparable to the human brain’s ability to make decisions.

 Lack of AI know-how in a company structure or the business of a company finding it hard to align its interests and business with artificial intelligence is evident. On the contrary, there are many companies which benefited from AI by aligning their business according to this new use of technology. Tata steel is one example which is a company of size more than 9000, mainly of subsidiary employees. The main AI application they worked on is the optimization of the raw material recipe. Biotech, a US-based company, introduced an automated wet lab and recommendations engine for the experiment. Both the organizations included AI in their business to improve the potential worth of the company. In several cases, organizations using AI competed with their adversaries and outnumbered them in resources and net worth. So, a general attitude of an organization towards the implementation of AI, despite many limitations until know, is very important.

Analysis:

In this section, pieces of evidence will be analyzed carefully based on creative thinking and analytical reasoning. We will analyze whether labeling of data and its collection are really big problems in the way of AI implementation to improve business and fixing managerial issues. Data is not always present in an organized form; rather, it is scattered in the form of raw, unstructured pieces of data. Due to excess internet traffic, raw data is present in huge quantities. Deep learning machine models are trained in order to extract usable data for processing. In fact, this is not as easy as said generally because data filtering requires a lot of searches. Data can be collected from the information which is present on public forums or purchasing it from other parties, but still, not all types of data can be retrieved with these techniques. Hence to use AI for business purposes like quick manipulation of data, extracting numbers for comparisons and analyzing market trends and practices for superfast statistical analysis, and data handling is very necessary.

As far as computational and decision-making abilities of AI algorithms is concerned, limitations are present. These limitations lie in the domain of information technology, and computer scientists are working on multi-state systems and networks to tackle them. The use of artificial neural networks is one of them. These networks are implemented using quantum computational algorithms using quantum computers to enable more speed, efficiency, and decision making.

 Lack of AI practices in accompanies due to many reasons. One reason is the possible threat of robots overcoming human affairs and ultimately superseding in all the aspects. We will analyze the reliability of that concern critically. By looking from a deterministic point of view, companies using and benefiting from AI, including Facebook, Google, and Amazon, are making technical and financial development way higher as compared to others. Google has launched its AI-based applications like Cortana, Hound, and Socratic, which are used by millions of users all around the globe. Lack of AI practices may not cause sudden loss to the company but will result in ousting from the completion. As an example, Zymergen, a biotechnology company automated its wet labs, coupling them with machine learning infrastructure, and reportedly getting experimentation throughput 10 times higher. The evidence suggests the need for AI applications for better growth and results. Robots overcoming human beings because of the advent of AI cannot be justified as AI still lack computational abilities to map human decision-making mechanisms.

Solutions:

For handling problems related to data extraction from web sources and labeling it according to its characteristics to make it useable, a number of techniques can be adopted. One solution is the deployment of a team, an expert in data science to do the job or assign the job to another company. This may give in highly accurate labeled data but is time-consuming and expensive. In the case of an external team, one cannot track the progress of the team. Another possible solution is the programming of the data using automated scripts. This will result in extremely fast results by virtue of automation. Human intervention is still not exempted in this case because automated scripts are needed to and other issues related to security management. So, this is a good solution and must be adopted.

The use of artificial neural networks for catering AI algorithm’s limitations is a good option. These networks are based on quantum mechanics, which is more useful and has the ability to control more states at one instant. These networks use a 'qubit' which is a quantum bit instead of a binary bit. Not only these networks can operate using two states at a time, but they also incorporate their superposition. This enables quantum supported AI algorithms to solve problems that are very complex and cannot be comprehended using ordinary computers. No doubt, this is one feasible solution, but only when it is used for highly dedicated use because of its great cost and architectural requirements. Quantum computers, specifically designed to support such computations, are also highly sensitive to the environment. A slight change in the environment can change the results, so it is affordable for governments, big multinationals, and for purposes like geography, astrology, and in the studies of sub-atomic processes. For other businesses, however, the use of conventional AI is still useful and appreciable.

The solution to lack of AI trends in market due to misunderstanding and technical unawareness is education primarily. An overview of artificial intelligence., its mechanisms and benefits it may bring to improve business and solve inefficiencies in management, is necessary for the market stakeholders. They must be provided with enough pieces of evidence in support of the use of AI by comparing conventional practices with some big players of the industry who have not only successfully applied but also doing extensive research in the field.