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IMPORTANCE OF ARTIFICIAL INTELLIGENCE

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Abstract - Discussion about misconceptions on artificial intelligence and impact on transforming customer engagement. Seamless experiences. Research to ensure that artificial intelligence remains safe and beneficial. Benefit and risk of artificial intelligence.

The ability to learn is one of the most fundamental attributes of intelligent behavior. Consequently, Progress in the theory and computer modeling of learning processes is of great significance to fields concerned with understanding intelligence. Such fields include cognitive science, artificial intelligence ,information science ,pattern recognition, psychology, education, epistemology, philosophy, and related disciplines.Artificial Intelligence (AI) refers to the simulation of human intelligence in machines that are programmed to think like humans and mimic there actions. The term may also be applied to any machine that exhibits traits associated with a human mind such as learning and problem-solving. Artificial intelligence is intelligence demonstrated by machines, unlike the natural intelligence displayed by humans and animals, which involves consciousness and emotion. Artificial Intelligence (AI) is a wide-ranging branch of computer science concerned with building smart machines capable of performing task that typically require human intelligence . AI is an interdisciplinary science with multiple approaches, but advancements in machine learning and deep learning are creating a paradigm shift in virtually every sector of the text industry.

***Key Words*:** Artificial intelligence, Risks, Benefits

1.INTRODUCTION

Artificial intelligence (AI) is intelligence demonstrated by machines, unlike the natural intelligence displayed by humans and animals , which involves consciousness and emotional. The distinction between the former and the latter categories is often revealed by the acronym chosen .'Strong' AI is usually label as artificial general intelligence(AGI) while attempts to emulate 'natural' intelligence have been called artificial biological intelligence (ABI) .Leading AI text books define the fields as the study of "intelligence agents" : any device that perceives its environment and takes actions that maximize its chance of successfully achieving its goals colloquially, the term "artificial intelligence" is often used to describe machines that mimic "cognitive" functions that humans associate with the human mind , such as "learning" and "problem solving". As machines become increasingly capable, tasks considered to require "intelligence" are often removed from the definition of AI ,a phenomenon known as the AI effect.

Artificial Intelligence Definition

[1] An intelligent entity created by humans.
[2] Capable of performing tasks intelligently without being explicitly instructed.
[3] Capable of thinking and acting rationally and humanely .

2. METHODOLOGY

The best methodology for AI and machine learning .The two most widely considered software development models in modern project management are , without any doubt , the waterfall Methodology and the Agile Methodology.

A Waterfall Process : Think of building a bridge , a mechanical machine or an electronic hardware device . You know the requirements , the necessary building blocks and clear steps that need to be followed. Each step has a clear start and finish : 1 - prepare the ground, 2- construct a foundation ,3- construct poles , etc…

I guess for anyone in information technology and familiar with agile software development , it is clear why this would not work. The reason also is the interactive nature of data and product in the AI solution . It is rare that all necessary data for the development of a full AI solution is ready .Think about a self driving car project . No one has all data necessary to build a product. When a prototype is built, it is sent to the road to collect data . I argue the current self driving cars are not really the product .They are just data collection devices . The idea is that the AI solution will evolve an improve with each iteration of this cycle.

An Agile Process : The iterative nature of building data collection devices and prototypes and there continuous improvements reminds us of an agile process. The way the agile/lean methodology builds a product is nicely captured by the metaphor . If the car is metaphor for a software product ,it is easy to determine what is the MVP version of it . For going from point A to B a skateboard is the most minimal way to do so . We can build skateboard component easily and in the software world, the same code base can be used to build up future versions on the same foundation . This will not work for an AI product.

3. MODELING AND ANALYSIS

(a) Liner Regression.
(b) Logistic Regression.
(c) Liner Discriminant Analysis.
(d) Decision Trees.
(e) Naive Bayes.
(f) Learning Vector Quantization.
(g) Support Vector Machines.

The use of logic modeling techniques is beneficial for regulatory reasoning in various ways. In the following we distinguish between drafting regulations, and understanding and applying regulations. Regarding the understanding and application of regulations, formal systems have the following advantages. These advantages are important, for example, for "naive users/subjects of regulation" who are regulated but do not wish to study the regulations.

1. Decision support: It is possible to run a specific case with the given regulations to get a correct answer. Such a case might be a query whether a certain damage is covered by an insurance policy.

2. Explanation: When an answer is given, there is also a reasoning chain explaining this response. This can be most useful in, say, help desks. Drafting regulations can be supported in the following ways:

3. Anomaly detection: Formal methods can be used to detect anomalies such as inconsistency, incompleteness and circularity. Such anomalies are detected either by static analysis, or by the performance of the proof theory.

4. Hypothetical reasoning: It is possible to investigate the effects of changes to regulations on the entire regulatory system. This is possible because regulations are represented as executable specifications. For example, the Taxation Office is interested in detecting possible loopholes.

5. Debugging: In many cases we know what the answer to a specific query should be, yet the regulations in their current form lead to a different answer. Debugging suggests changes to the regulations which will have as an effect the desired outcome. In our project, debugging can be carried out along the lines of "declarative debugging"

Artificial intelligence has also been put into use in areas that would be of great harm to human life. The case, therefore, ensures that companies have the ability to protect the lives of different people who work for them through the process of substituting human subjects with artificial intelligence [8]. One of the areas in which such a case is applied is in the mining industry. Some of the underground mines are usually quite dangerous for human subjects. In such a case, mining companies have been able to create vehicles and machines that can operate underground without being manned by people. In the event of any accidents such as the collapse of the walls of the mines, the different equipment used in the process of mining could be damaged, but the general lives of different people involved in the activities could be well-preserved.

Some mining companies combine the use of both human and artificial intelligence for the purpose of attaining the kind of outcomes that would be desirable towards having the best outcomes as they relate to protecting the general lives of various individuals who regularly work in the mining industry [9]. The use of such systems is also critical as it helps to assess the general situation found in the inner parts of the world. Through the given case, they can clearly identify some of the problems that could be associated with the inner parts of the ground for the purpose of increasing the chances for the best outcomes. The process also has a chance of showing some of the actions that the company could do to provide safe strategies for different employees who work in the mines, with a view to reducing the chances of harm.

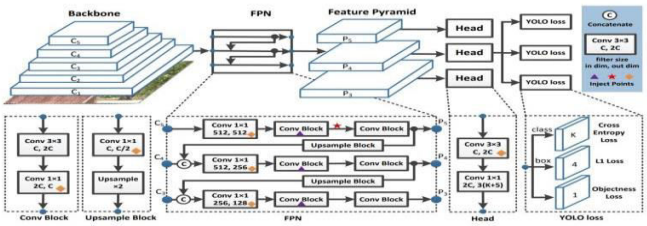

Fig -1: Block representation of AI

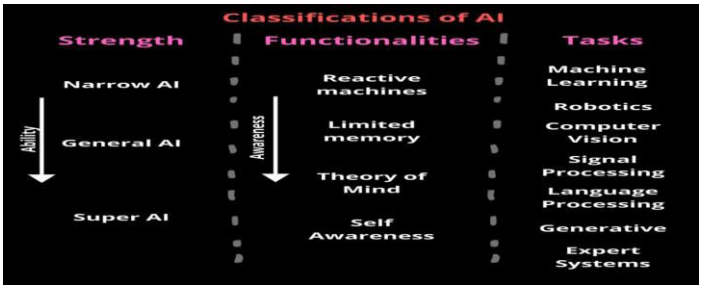

Fig -2: RESULT AND DISCUSSION

Artificial intelligence (AI) is awakening fear and enthusiasm in equal measures. Some have likened the advances in AI to "summoning the devil" and there are concerns that AI threatens to end humanity. AI can scare people, perhaps due to the science fiction notion that machines will take all of our jobs; 'wake up' and do unintended things. However, where some see danger, others see opportunity!

This article pulls together information from a series of articles on AI and machine learning, its' impact on the future world of work, and implications for occupational safety and health (OSH).

It's likely that the upwards trend in capabilities of AI systems will continue; that systems will eventually become capable of solving a wide range of tasks (rather than a new system having to be built for each new problem), and that the adoption of AI within many industries will continue. Evidence suggests AI is

currently unable to reproduce human behaviour or surpass human thinking; it's likely to stay a complementary workforce tool for a very long time to come. However, steady gradual improvements in AI could reach a point where AI exceeds current expectations. The continued development of AI will depend on moral public opinion regarding the benefits and acceptability of it, on businesses continuing to gain competitive advantage from using it, and continued funding for research and development of it.

It is difficult to determine where this technology might create new jobs in the future, yet easier to see which tasks AI might take from humans. It's likely that any routine, repetitive task will be automated. This shift to automation has happened for centuries, but what is different today is that it affects many more industries. It's likely that we will adapt to technological changes by inventing entirely new types of work, and by taking advantage of our uniquely human capabilities.

Historically, automating a task has made it quicker and cheaper, which has increased demand for humans to carry out tasks around those which can't be automated. In addition, rather than replacing jobs altogether, technology has changed the nature of some jobs, along with the skills required to do them. As the workplace, jobs and tasks change, knowledge will need to be updated, and skills will need to adapt. 'Soft' skills, such as collaboration, flexibility and resilience, will become increasingly important. The challenge will be to develop our skills as quickly as the technological advancements are being made. Therefore, we may need to ask ourselves, what the health and safety risks might be if the technology advances faster than skills required for working with it?

In the future, if over-reliance is placed on technology people could become disconnected from the process. They may cease to understand how things work or fail to appreciate how bad things are when they go wrong. Whilst an AI system can present data and recommendations, the decisions on what action to take is one for humans. However, if humans blindly follow automated instructions, without knowing how to question them, this could have negative implications for OSH.

Greater numbers of workers will be 'new' to their roles and tasks (with resulting implications for risk management). Therefore ongoing workforce training and re-learning will be increasingly important in the future.

In a future where benefits and risks are 'incalculable', it will be how humans choose to use the technology that decides whether it's good or bad. To harness the power and benefits of machine learning we need to decide what we want machines to 'learn' and/or do, and what questions we want them to answer. It is clearly important that controls and goals for AI are set, and that a lot more empirical work needs to be done to gain a better understanding of how goal systems (in AI) should be built, and what values the machines should have. Once this is done, it will provide an idea of what sort of things should be put in a regulatory framework, or whether existing regulatory frameworks are robust enough.

If AI is seen to contribute to business success via enabling a better understanding of customers, along with a more rapid response to their needs, then its uptake within the world of work is likely to continue. In the future, many tasks will have the opportunity of input from AI. However, rather than replacing humans, it is the combination of AI and humans that is likely to bring the greatest benefits to the working world. Therefore, we might conclude that it will be how AI 'interacts' with humans that will influence its role in the future world of work. If human values are carefully articulated and embedded into AI systems then socially unacceptable outcomes might be prevented.

So, does AI present opportunity or danger? Will machines take all the jobs or create more than they destroy? Opinions on this are divided, and the reality is likely to be somewhere in between the two extremes. AI will continue to change the world of work, and workers will need to engage in life-long learning, developing their skills and changing jobs more often than they did in the past.

In the future, as humans increasingly work together with AI, the challenge for us in HSE's Foresight Centre is to ensure that we anticipate any negative health and safety consequences, assess the risks, and share this knowledge to benefit the future working world.

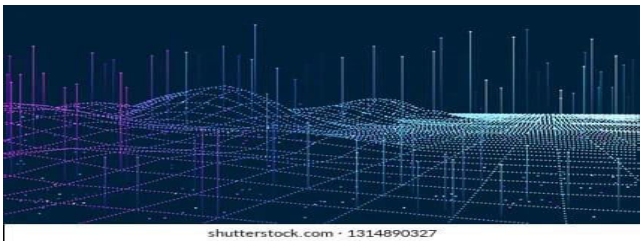

Fig -3: wave of AI

CONCLUSIONS

AI is at the center of new enterprise to build computational models of intelligence. The main assumption is that intelligence (human or otherwise) can be represented in terms of symbol structures and symbolic operations which can br programmed in a digital computer. AI program can outperform human experts. Now the great challenge of AI is to find ways of representing the commonsense knowledge and experience that enable people to carry out everyday activities such as holding a wide-ranging conversation, or finding there way along a busy street. Conventional digital computers may be capable of running such programs, or we may need to develop new machines that can support the complexity of human thought.

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