International Journal of Management and Economics ISSN: 2231 – 4687
Impact Factor-6.81 (SJIF)
Vol. I No. 28 Janaury-2019 UGC Referred Journal No:-64206

Artificial intelligence – An Overview

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Introduction

Face recognition, self-driving cars, industrial robots, tumour detection and automated sport journalism are all real-world enigmas being solved with applications of intelligence (AI.) Today AI applications focus on very narrow tasks, but together these AI-driven tasks are reshaping businesses, industries and markets as the technology becomes more sophisticated, the use of AI will continue to grow quickly in the coming years. The paper is based on What artificial intelligence is, how it can change our everyday life in the future.

What does it encompass?

AI is an over-arching concept that encompasses multiple disciplines. These draw upon knowledge and techniques from mathematics, statistics, computer science and domain-specific expertise to create models, software programs and tools.

These software programs and tools can undertake complex tasks with outcomes that are comparable, if not better, to traditional manual approaches. It contains the following things

• Knowledge Representation	• Natural Language Processing
• Natural Language Generation	• Autonomous System
• Virtual Personal Assistants	• Machine Learning
• Deep Learning	• Deep Q&A Systems (Or Cognitive Computing)
• Intelligent Agents	• Audio/Speech Analytics
• Planning	• Machine Translation
• Recommender Systems	• Social Network Analysis
• Neural Networks	• Image Analytics
• Visualisation	• Robotic Process Automation
• Sensors/ Internet of Things	• Pattern/ face Recognition
• Neuromorphic Computing	• Cognitive Cyber Security
• Robotic Personal Assistant	• Next Generation Cloud Robotic
• Thought Controlled Gaming	• Real Time Universal Translation
• Virtual Companions	• Real Time Emotion Analytics
• Chatbots	

What does technology advancement driven by AI imply for businesses?

AI is one ofthe most significant general-purpose technologies of the 21st century. With machine learning, we can now build systems that are capable of improving their own performance by learning from data over time. Therefore, financial institutions and hospitals have started utilising AI systems for fraud detection and diagnosis of diseases to effectively harness the potential of their information and tackle more complex problems. manufacturing client deploy and use predictive maintenance solutions using machine learning. This allowed the client to reduce machine downtime and improve equipment efficiency.

A continual challenge human has been facing is identifying ways to perform certain tasks such as recognising images and audio so that we can replicate similar functionalities using software applications. Machine learning systems try to mimic the learning processes of humans—that is, learning at scale from data and achieving levels of performance comparable to humans in processing it and arriving at certain outcomes.

Will artificial intelligence benefit humans and, if so, how?

AI is expected to transform the way we humans live and work. This could be by helping with automating repetitive tasks and personalising or customising products and services for consumers with the ability to learn from specific preferences and interests. AI can be deployed in hostile environments. For example, intelligent robots can be fed with information and sent for defusing bombs, thereby reducing risks to human life. AI systems can minimise occurrences of 'human error', assuming that they are programmed ---

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correctly and can help in making faster decisions using cognitive technologies. This also begs the question as to who would be liable when an AI system malfunctions. Also, this system implementation is used for traffic signals to identify the breaking signals by using face recognition technique and send fine message to the respective person this helps to improve the traffic controls in the metro cities.

AI also brings many advantages, and AI is already making people's lives better, and will do so in the future. Driverless cars will become available for anyone in the future. The AI automated Google Driverless Car already took the first test drive in 2011. Driverless cars give humans time for relaxation or a possibility to work but also are much safer than vehicles driven by humans.

AI is already making customer experiences better and customers can benefit much of AI. With the help of AI companies can target advertisements for a particular group of people, but also design products that appeal to larger audiences as well

The future of higher education is intrinsically linked with developments on new technologies and computing capacities of the new intelligent machines. In this field, advances in artificial intelligence open to new possibilities and challenges for teaching and learning in higher education, with the potential to fundamentally change governance and the internal architecture of institutions of higher education.

The impact of AI on sports is significant and will continue to grow. Teams and organizations look for game changing advantages, with the help of AI to become better than their opponents. Wearables are already used in sports, to analyse players' workload, strength and technique. AI can also facilitate players' safety in sports. Long-term concussions can be detected with the help of AI. these are the uses of AI that benefit human life providing better life using this AI technique.

AI Technologies

Under the broad ambit of AI, multiple technologies have also developed over the years. Below are a few definitions for the different focus technologies developed over the years and their current market share

- **Machine Learning (ML) –** uses computer algorithms based on mathematical models using probability to make assumptions and can make predictions about similar data sets.
- **Cognitive Computing –** builds upon ML using large data sets with the goal to simulate human thought process and predictive decisions. Training the systems tends to utilize human curation.
- **Deep Learning –** builds on ML using neural nets to make predictive analysis. The use of neural nets is what is differentiating Deep Learning from Cognitive Computing right now. Deep Learning is also helping improve image and speech recognition.
- **Predictive application programming interfaces (APIs)** – A predictive API basically uses AI to provide a predictive output (from a standardized set of outputs), when you have data sets.
- **Natural Language Processing (NLP) –** programming computers to understand written and spoken language just like humans, along with reasoning and context, and finally produce speech and writing. Many machine learning companies use NLP for training on unstructured data.
- **Image Recognition –** recognizing picture and objects as humans, as well patterns in visually represented data, which may not be apparent.
- **Speech Recognition –** converting spoken language to data sets that can be processed by NLP

Conclusion

The rise of AI makes it impossible to ignore a serious debate about its future role of teaching and learning in higher education and what type of choices universities will make in regard to this issue. AI systems like chatbots, digital assistants and robots can, at least partially, carry out customer service operations such as informing about new products/services, handling feedback and concerns and responding with solutions.

AI, when integrated into businesses, is expected to bring about higher productivity, efficiency and growth. Media companies especially have noticed that with the help of AI human labour can be freed up for more intense creative efforts and noticed that AI is strategic necessity and an immense opportunity for the companies. People can also work alongside AI, doing tasks that are highly complex and repeatable, which at the same time frees up time for professionals to make more intelligent decisions. AI helps to improve efficiency and to create new and better user experiences and products. The key is to understand all the different dimensions in which AI can aid a company.

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