

The Future of IT and Artificial Intelligence

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ABSTRACT

AI and related technologies have had a positive impact on the way the IT sector works. To put it simply, artificial intelligence is a branch of computer science that looks to turning computers into intelligent machines that would, otherwise, not be possible without direct human intervention. By making use of computer-based training and advanced algorithms, AI and machine learning can be used to create systems capable of mimicking human behaviours, provide solutions to difficult and complicated problems, and further develop simulations, aiming to become human-level AI. AI and Machine Learning (M.L.) have replaced traditional computing methods, creating changes in industries to perform and conduct their day-to-day operations. From research and manufacturing to modernizing finance and healthcare streams, AI has changed everything in a short span of time.

Key words:

Artificial Intelligence, Information Technology, Decision Making Business Strategy.

INTRODUCTION

AI is an extremely powerful business tool; it assists an IT team in its operational/Business processes, helping them to act more strategically. By tracking and analyzing user behaviour, the AI system is able to make suggestions for process optimization and even develop an effective business strategy.

Artificial Intelligence (AI) has become an important aspect of the future. This applies equally as well to Information Technology (IT) as it does many other industries that rely on it. In past, AI technology seemed like something straight out of science fiction but today, we use it in everyday life without realizing it – from intelligence research to facial recognition and speech recognition to automation and in many folds

According to the statistics, the AI market is expected to reach \$190 billion by 2025. By 2021, global spending on cognitive and AI systems will reach \$57.6 billion, while 75% of enterprise apps will use AI technologies.

The National GDPs, mentions that AI is expected to boost China by 26.1% and in the US by 14.5% towards 2030

In a local level, some 83% of businesses mentions that AI represents a strategic priority, while 31% of creative, marketing, and IT professionals look to invest in AI technologies over the following 12 months. Similarly, some 61% of business professionals point to AI and machine learning as their most significant data initiative over the coming year. In addition, some 95% of professional employees who are skilled in using big data also use AI technologies.

The Impact of AI in Information Technology

The digital transformation and its adoption of AI technologies by industries have given rise to new heights to solve and optimize many core challenges in the IT industry. In all tech applications, AI happens at the core of development for almost every industry, with Information Technology being among the first.

If the development and deployment of IT systems at large scale were next to impossible, but now through AI's development of advanced algorithmic functions this is now possible.

Better Secure Systems

Data security is of critical importance when it comes to securing personal, financial, or, otherwise, confidential data. Government and private organizations store large amounts of customer and strategic data that needs to be securing at all times with the use of advanced algorithms also with the help of machine learning, Artificial Intelligence has provided a necessary level of protection to create a high-security layer within all of these systems. AI helps in identifying potential threats towards data breaches, also providing the much needed solutions and provisions to avoid any existing system loopholes.

Better enhanced Coding Productivity

Artificial Intelligence also uses a series of algorithms which can be applied directly to help programmers when it comes to detecting and overcoming software bugs, as well as when it comes to writing code. Some forms of Artificial Intelligence have been developed to provide suggestions when it comes to coding, which, in turn, helped increase efficiency, productivity, and provide a clean and bug-free code for developers. By looking at the structure of the code, the AI system will be able to provide useful suggestions, not only improving the overall productivity but also help cut on downtime during the production process.

Increased Automation

One major benefit of automation is that a lot of the “legwork” can be achieved with minimal or no human intervention. By using deep learning applications, IT departments can go a long way in automating backend processes that can enable various cost savings and minimize human hours spent on them. Numerous AI-enabled methods will also improve over time as their algorithms learn from their mistakes and improve their effectiveness.

Better Application Deployment during Software Development

When we talk about application deployment control, we need to take into account the various stages that go into software development. This means that the software versioning control is critical and highly beneficial during the development stage.

Since AI is all about predicting possible issues, it has become an integral and highly-useful tool in detecting and anticipating problems during this stage. And, these can be avoided or fixed without any major obstacles meaning that developers will not have to wait until the final stage before improving the app's overall performance.

Improved Quality Assurance

Quality assurance is, in large part, about ensuring that the right tools are used during the development cycle. To put it somewhat differently, AI methodologies can help software engineers use the right tools to fix various bugs and issues within the applications and adjust them automatically during the development cycle.

Better Server Optimization

Quite often, the host server will be bombarded by millions of requests on a daily basis. Whenever this happens, the server needs to open web pages that are being requested by users. Because of the constant flow of requests, some servers may become unresponsive and end up slowing down over the long term. AI helps in optimizing the host service so as to improve customer service and enhance the overall operations. As IT demands will progress, AI will be increasingly used to integrate those IT staffing demands and provide more seamless integration between the current business and technological functions.

Should firms Implement AI?

There are plenty of ways that organizations can integrate Artificial Intelligence into their operations. The most common reasons are to optimize the company's processes. For instance, AI can be used to send out automatic reminders to departments, team members, and customers. It can also be used to monitor network traffic, as well as handle a wide variety of mundane and repetitive tasks that would, otherwise, end up with lot of people's time. This, in turn, will free them up to focus their time and energy on more critical aspects of the business.

Another advantage for organizations is to implement AI is in terms of the customized customer experience that it has to offer. It would include everything from recommendations, answering questions, helping users find products, and more. AI can also be used by businesses to put together large amounts of data, that can lead to strategic insights and business intelligence that would have, otherwise, not be discovered.

Data sources mention

Some 84% of businesses say that AI will help them obtain and/or maintain a competitive advantage.

Some 75% of companies believe that this technology will allow them to move into new businesses and ventures.

Some 80% of tech leaders look at AI as a means increasing productivity and job creations

Some 79% of executives say that Artificial Intelligence will help with their jobs making easy and more efficient, while 36% see it as a primary goal to make workers focusing them to be creative

But for many firms however, the prospect of implementing AI may seem challenging and unfamiliar. In fact, roughly 37% of executives say that the main obstacle in implementing AI in their organization is that the managers don't understand how emerging technologies work. Hence when paired with the IT department, Artificial Intelligence will be much easier to integrate.

Will AI Replace IT?

Reasons for why some organizations are reluctant in implementing artificial intelligent technology is that they fear that it will make many jobs irrelevant and obsolete. The expressed concerns that "robots" will take over humans are not totally unfounded as there are certain jobs that are better handled by advanced AI, particularly when the tasks require the analysis of massive data sets. Super intelligent AI has been used to perform some tasks faster and more effectively than the human brain ever could, largely because the machines don't need frequent rest periods.

It is, nevertheless, important to keep in mind that this is not the first time in history when technology has resulted in the loss of certain jobs.

However, these job losses have always been covered by the creation of new jobs, sometimes, in fields that didn't exist before. While it's next to impossible to predict the future of Artificial Intelligence with any high degree of accuracy, it's relatively safe to say that the appearance and proliferation of the technology has followed a similar trend. It's because of AI that there are now a plethora of new jobs in both existing and pioneering fields.

That said, AI will not outperform humans, as some may believe when it comes to some specific tasks that demand human intelligences and emotions. This is why it's critical that Information Technology supports Artificial Intelligence. In more ways than one, AI works as a complement, not a replacement for the IT department.

If we are to look in future, many feared that self-driving cars will replace all truck drivers. More recently, however, both the CEO of Waymo and the former CEO of Uber have said that self-driving cars will not surpass humans. The main reason is that this type of technology will never be able to handle all the driving conditions as well as human drivers can. When it comes to some exceptional conditions such as unfavourable weather conditions or traffic congestion, human drivers are still better suited to drive vehicles than AI

Similar to self-driving cars, there are many aspects of Information Technology that will require human input and cannot be replaced by Artificial Intelligence. Instead, companies need to focus their attention on how AI can be used by IT professionals to improve the overall effectiveness of their business.

How Do Information Technology and Artificial Intelligence Work Together?

Aside from using AI in software testing and development, we've cited how; the technology can also be used together with IT in the following ways:

Service Management

AI technology and machine intelligence are also widely used when it comes to service management. When leveraging AI for service management, companies can use their resources more effectively, providing faster deliveries at a cheaper price.

Thanks to its machine learning capabilities, AI will offer IT companies a type of self-resolving service desk which will allow them to analyze all of their input data and provide users with proper suggestions and possible solutions. By applying AI, they will be able to track user behaviour, make suggestions, and provide self-help options to make the service management process more effective, overall. In other words, AI will provide users with a better experience through self-service.

In addition, AI can be used to develop computer vision namely (CV) this technology that can be used to automate the visual understanding from a sequence of images, PDFs, videos, and text images with the help of M.L. algorithms. What happens is that CV replicates certain functions of human vision, but at a much faster and other, more accurate rate.

Machine learning and deep learning capabilities of AI will allow systems to analyze a request submitted to a service desk. The AI will find all concurrent requests, compare the newly submitted ones with those that have been previously resolved, and get an instant understanding based on past experience.

All in all, AI being such a powerful business tool, it can assist IT professionals in their operational processes, by providing them with a more strategic approach. By being able to track and analyze user behaviour, the AI system will provide suggestions for process optimization and even help with developing a comprehensive business strategy.

IT Operations (AIOps)

Artificial Intelligence for IT refers to the use of Artificial Intelligence to manage Information Technology based on a multi-based platform. The main technologies used in AIOps are Machine Learning and Big Data. These automate data processing and decision making, using both historical and online data.

The expected result of using AIOps is a continuous analysis that will provide answers and allow for the continuous implementation of corrections and improvements in terms of IT infrastructure. The AIOps platform used will connect performance management, service management, and automation to achieve its intended purpose and can be looked at as a continuous improvement of information systems.

Reasons of AIOps is growing popularity

Since several years. The following data shows

1. The ever-increasing volume from data collection systems,
2. The increase in the total number of information sources, and
3. The rising number of changes in controlled systems.

4. As such, it's also become increasingly hard for specialists and professionals to keep track of all of these systems also respond to any issues effectively.

Business Process Automation

The biggest advantage that AI brings to the IT sector is automation. With AI being embedded in almost every work process, a lot of work can be done without the need of any direct human intervention.

The benefit of depth technologies will allow operations, business process, helping them to reduce expenses and minimize a lot of manual work. In addition, AI algorithms are designed to learn from previous experiences, meaning that they are continuously improving themselves.

It's estimated that an AI system will soon be able to run and manage software development, in large part, by itself, being able to understand most, if not all intentions behind a code. If the systems will not be happy with the code provided or will find some defects and inconsistencies, it will fix it in real-time with minimal human assistance.

AI will also reach a point where it will automate the process of running and managing company networks. It will be able to understand patterns that are created with network fingerprints while actually using the AI system, to begin with. By using AI for automation, IT companies will be able to enhance their AI applications in other niches. Put simply, AI will assist in running and managing computer systems and will, therefore, contribute to all other forms of computation.

Fraud Detections

Modern technology has made it much easier for companies to detect fraud. However, it has also developed many ways in which cybercriminals are committing fraud. Most businesses will try to use various ways and means to detect if any variations have taken, which usually will involve statistical data analysis and AI. There are several Artificial Intelligence tools used in fraud detection.

Among these, machine learning can process large amounts of data at a much faster rate than people can. It can also be designed to become faster and more accurate over time. Machine learning tools will be able to identify patterns of fraudulent behaviour by looking at historical data that involved similar circumstances. The IT department will then use the synthesized data to take the appropriate action against these cyber criminals as well as build more effective preventive measures for the future.

Takeaways

Artificial Intelligence has been gaining a lot of traction in the Information Technology sector and that shows no signs of slowing down. With its Machine Learning and Deep Learning capabilities, this technology is transforming many areas of the industry by making them more efficient, effective, and more focused on core tasks that need people's attention the most.

Is artificial intelligence part of IT industry?

AI for IT Operations (AIOps)

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How is AI affecting the IT industry?

One of the most significant ways AI has affected the IT industry is through automation. Companies can automate many of their more complicated processes using AI-powered tools and software. This not only saves time and resources but also decreases the possibility of human error.

An IDC report projected India's AI market to reach \$7.8 billion by 2025, growing at a CAGR of 20.2 percent. Organizations will be investing in AI solutions across functions like customer service, HR, IT automation, security, etc. India has already built an edge in AI talent. 16-Mar-2023

Which industry is most affected by AI?

Data and Highlights

Industry	Estimated Share of U.S. Employment Exposed to AI (%)
Office and administrative support	46%
Legal	44%
Architecture and engineering	37%
Life, physical, and social science	36%

Firms which are leading in artificial intelligence in India?

Start SIP in Persistent Systems

	Market Cap (Rs. cr)	ROE(%)
Tata Elexi	38,356	34.33
Cyient Limited	10,648	16.75
Kellton Tech Solutions Ltd.	484	14.71
Persistent Systems Limited	35,552	20.49

Jobs that can be replaced by AI?

Experts are of the opinion that it may affect white collar workers in line. It's said, AI won't replace humans entirely, and meaning now is the time to adapt. Automation is coming, and this time it's for the white collar workers

Industry best suited for artificial intelligence?

Manufacturing and Operations.

It is beyond doubt that the manufacturing industry is leading the way in the application and adoption of AI technology. In manufacturing, AI is employed across several lines and layers of operations, from workforce planning to product design, thus improving efficiency, product quality and employee safety.

Is AI a future job?

According to recent reports, the demand for talent in AI and machine learning has increased by almost 75% over the last few years, and it is only expected to grow. If you wish to thrive in this segment, now is the time to build a career in it. A career in AI offers you a wide range of paths.10-Apr-2023

Is AI a good career in India?

The demand for AI professionals in India is rapidly increasing. Job roles like AI Research Scientist, Machine Learning Engineer, Data Scientist, NLP Expert, and Computer Vision Engineer are in high demand. To be successful in these roles, one must have the right skills and expertise in the relevant domain areas

India is leading the way in the field of Artificial Intelligence (AI), with a score of 3.09, ranking first in terms of AI skill penetration. Additionally, India has recently secured the first and fifth ranks in AI talent concentration

and AI scientific publications, respectively, on a global scale. With such a strong position, it's no surprise that the demand for AI professionals is popular and high in the country.

However, despite the impressive strides made in AI, there is a significant gap between the current demand and supply of AI professionals, estimated to be about 51%. As a result, the estimated demand for AI professionals in India by 2024 is expected to exceed 1 million. If you're looking to capitalize on this opportunity, keep reading to discover the most in-demand job roles and skills in AI in India.

Scope of Artificial Intelligence in India: Top 5 in-demand job roles

Artificial Intelligence (AI) is one of the fastest-growing fields of technology in the world, and India is no exception. As businesses and industries increasingly rely on AI to make data-driven decisions, the demand for AI experts is skyrocketing.

Here are the most in-demand job roles in AI,

AI Research Scientist: As an AI research scientist, you will be responsible for developing new algorithms, models, and architectures for machine learning. Working on cutting-edge research projects that are essential for the advancement of AI technology is also a crucial part of your job description.

Machine Learning Engineer: You will work closely with data scientists and software developers to create intelligent software applications.

Data Scientist: As a Data Scientist, you will be responsible for collecting, analyzing, and interpreting complex data sets to identify patterns and insights.

Natural Language Processing (NLP) Expert: You will be required to work on a wide range of projects, including speech recognition, sentiment analysis, and language translation.

Computer Vision Engineer: As a Computer vision engineer, you will develop algorithms that can interpret and analyze visual data, including images and videos. You will also get an opportunity to work on a wide range of projects, including facial recognition, object detection, and autonomous vehicles..

Advantage on being skilled that will help you to get jobs in AI skilled areas

Deep Learning,

Data Analytics

Cloud Computing

Natural Language Processing

Machine Learning

Robotics

Computer Vision

Neural Networks

Predictive Analytics

Reinforcement Learning

References

1 <https://www.mycomputercareer.edu/news/the-future-of-i-t-and-artificial-intelligence/>

2 economictimes.com

3 nationalskillsnetwork.in

4. [Leewayhertz.com](https://leewayhertz.com)

5 thestar.com 23-May-2023

6 [13-Jun-2023 5paisa.com](https://13-Jun-2023.5paisa.com)

7 Abplive.com 27-Jun-2023

8 simpleworksit.com