

HOW AI AND MACHINE LEARNING HELPS IN UPSKILLING FOR JOBS

Nearly all forms of enterprise software, factory automation, transport and other industries are using AI-based interfaces in their daily operation. Acquire mathematical and programming skills to be a part of changing job scenario, writes Diwakar Chittora

There are at least two clear trends that show a demand-supply mismatch in tech jobs in cutting-edge IT fields such as artificial intelligence (AI) and machine learning (ML). According to industry predictions, there will be growth in the AI market from US\$ 21.46 billion to US\$190.61 billion between 2018 and 2025. Year on year growth is projected to be an impressive 36.62% during the same period. The second trend is more subtle. Big Indian IT firms in the US are reportedly 'hoarding' employees in these two fields as they foresee a shortage of skilled experts. They also fear a corresponding rise in the cost of hiring employees for tech contracts they have bagged for the future.

HOW ARE AI AND ML BEING USED IN INDUSTRY

Unlike the exaggerated robots of the 2001 Steven Spielberg movie of the same name, AI in reality is tamer. It is understood to mean ways of making computers, computer-controlled robots or programmes to think intelligently, mimicking the way humans think.

A computer programme with AI can solve generic problems for which it is programmed, but cannot really work on specific issues. They can accommodate new modifications without breaking structure. Traditional programmers would have to sort, sift and debug thousands of lines of code to make modifications.

AI finds applications in strategy games such as chess or poker where advance moves are determined by heuristic logic, natural language processing, virtual assistant technology, image and speech recognition and automated robotics. General AI systems which can solve any given problem are rare. Insurance and banking organisations regularly use AI to monitor fraud. Marketers use AI every time you shop online to gather your browsing habits and predict what you are most likely to buy. They will then advertise those products through pop-ups and logos. Self-driving cars, auto-pilot modes and smart homes using sensors are all based on AI, which will change the daily lives of consumers.

There is also a difference between AI and machine learning (ML) although a number of articles on the web club them together or use them interchangeably. "ML is the study of computer algorithms that improve automatically through experience," according to Tom Mitchell of Carnegie Mellon University. It is one of the ways we use to achieve AI or something closer.

CORE COMPETENCIES REQUIRED IN AI AND ML

For beginners, programming using C++ is a mandatory requirement. Also necessary is an understanding of how algorithms are created and executed. Typically, knowledge and expertise in Bayesian networks, neural networks, cognitive science theory, engineering, Physics, Robotics, undergraduate Algebra, Calculus, Statistics and probability are essential to hone your talents in ML. Graduates in Computer Science need only supplement their knowledge of Math and computing with a specialised course in AI and ML.

USING RIGHT OPPORTUNITIES

Analysis of professional networking site LinkedIn has shown that India is the third best-placed economy after the US and China to crack AI jobs and careers with high penetration of AI awareness. AI is a big part of investments into startups.

Among the more exciting opportunities one can expect in 2019, is the rising application of AI in healthcare to diagnose health issues in individuals. Smart infrastructure to help balance rapid growth in urban centres in India is also an option being explored by the government. BTech programmes now mandatorily have AI, IoT, ML and some other essential components of emerging technologies. However, constant changes in this dynamic field have made it mandatory for professionals to keep upskilling via a noted institution to remain relevant and job-worthy.

(The author is CEO and founder, Intellipaat)



HOW CAN YOU

ACQUIRE AI AND ML SKILLS

By some estimates, AI will create nearly 2.3 million jobs in the coming years. It might also make 1.7 million jobs obsolete but those would need to be replaced by 0.5 million new jobs. Nearly all

forms of enterprise software, factory automation, transport and other industries are increasingly using AI-based interfaces in their daily operation. In fact, by 2030, AI may end up offering US\$15.7 trillion to the global economy. Mathematical and programming skills are central to acquiring competency in this field. However, for seasoned tech professionals, it is also quite important to develop excellent communication skills. An understanding of how business works and the common processes used in day-to-day operations will help you better utilise your core competencies to improve organisational workflows.