

MACHINE LEARNING & ARTIFICIAL INTELLIGENCE: THE NEXT REVOLUTION

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ABSTRACT

The world today is a product of revolutions. Everything that we see around us, our economy, our lifestyle, the clothes, the way we think, the way we feel, our notions of right and wrong, everything has been guided by revolutions some of them being: the Industrial Revolution, the French Revolution, or the various Cultural and Philosophical revolution and the latest one which is still in its full swing i.e. the technological revolution.

KEYWORDS: *Industrial Revolution, French Revolution, Cultural & Philosophical Revolution.*

Introduction

Today new and new technologies apps and devices being created and being put into open market, so as to make our lives more convenient. They can be differentiated into some vividly huge contributions like the personal computer given to us by the late Mr. Ed Roberts, and the windows and mac contributed by masterminds like Bill Gates and Steve Jobs and some minor ones which just the applications being developed upon these platforms but in no means are less useful. We were on the verge of reaching a saturation point of technology, when the greatest minds stumbled upon the greatest idea of all times which could change humanity's future. The robots or more commonly and rightly said machines were being used since after the industrial revolution for doing high power mechanical work but what if these could be used to do our daily work not just blindly following the pre written commands but with intelligence, which it will get by recognizing and understanding the similarities and patterns in a large amount of data that we provide to it and in future when needed react according its previously gained experience. This gave rise to concept of machine learning and artificial intelligence. It's a science that's not new – but is now becoming more pertinent to our daily lives because of increased amounts of data, cheaper storage and greater processing power...Today we are using this concept everywhere around us. Every time you use a web search engine like Google or Bing to search the internet, one of the reasons that works so well is because machine learning implemented by Google or Microsoft, has learned how to rank web pages. Every time you use Facebook or Apple's photo typing application and it recognizes your friends' photos, that's also machine learning. Every time you read your email and your spam filter saves you from having to wade through tons of spam Email, that's also machine learning.

Apart from being used in the day to day applications various large scale industries also have recognized its importance:

- **Financial Services:** Banks and other businesses in the financial industry use machine learning technology for identifying important insights in data as well as preventing fraud. The insights can identify investment opportunities, or help investors know when to trade. Data mining can also identify clients with high-risk profiles, or use cyber-surveillance to pinpoint warning signs of fraud.

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- **Health Care:** by the virtue of machine learning billions of test cases can be studied and understood in a matter of minutes thus making machine far more capable to recognize the patient's problem matching with the previously learned patterns as compared to a human doctor.
- **Government:** Government and the agencies working under it have access to a larger amount of data than any other private agency. Analyzing sensor data, for example, identifies ways to increase efficiency and save money. Machine learning can also help detect fraud and minimize identity theft. Thus, it machine learning can be used in predicting economic, social, political crisis as well as in public security agencies to identify and catch defaulters.
- **Transportation:** Machine learning can help in analyzing various routes and studying previous experiences of persons traversing them thus making it possible in future to suggest the best possible route in future based not only on distance factor but also on various others like traffic, climate etc. It can also help delivery companies, transportation organization to fully confirm the identity of a person using not only facial recognition but also gait, facial expressions.
- **Oil and Gas:** it can help in identifying new energy resources, analyzing underground minerals and also streamlining oil distribution to make it more efficient and cost effective.
- **Marketing and Sales:** It can not only suggest items you might like to buy based on previous experience but may also suggest you the best time to buy that item by studying the price trends, thus making the market more user friendly.

All this pretty much illustrated the use of this awesome technology but as said above to accomplish all this the machine first needs to be given billions of examples and test cases so that it can actually take a decision in a new circumstance based on patterns and similarities with its previously gained experience. We provide this experience basically in two ways:

- **Supervised Learning**

As the name suggests we the humans are actively involved in it. We present to the machine the various situations as well as their solutions and this technique is used in areas of applications where historical data predicts likely future events. For example, it can anticipate when credit card transactions are likely to be fraudulent or which insurance customer is likely to file a claim.

- **Unsupervised Learning**

It is used in situations in which it left on machine to explore. For examples in a checkers playing machine it is made to play checkers with itself millions of times so that it starts recognizing what kinds of board positions make you lose and what kind of positions make you win. The machine in all such cases is left independent to play with data to find patterns and make conclusions. For example in banking systems the machine is made to go through account and transactional details of all the customers and based on similarities and patterns it finds they can be grouped accordingly and be specifically aimed at in various offer and policy campaigns.

So much said about all the astonishing things that we can accomplish by using machine learning and artificial intelligence, it seems that there is nothing in future these things would not be able to do and even if there is something they would have bypassed the human talent limits by a great deal. That's where the problem begins. As automation technologies such as machine learning and robotics play an increasingly great role in everyday life, their potential effect on the workplace has, unsurprisingly, become a major focus of research and public concern. Today people fear that these machines might in time become so powerful that in time they may erase us from the future claiming this planet to themselves.

"I fear that AI may replace humans altogether," said the world renowned physicist, Stephen Hawking in an interview with Wired magazine.

"If people design computer viruses, someone will design AI that improves and replicates itself. This will be a new form of life that outperforms humans. The real risk with AI isn't malice but competence," he said. "A super intelligent AI will be extremely good at accomplishing its goals, and if those goals aren't aligned with ours, we're in trouble."

An ex-Uber employee was recently found to have set up a non-profit religious organisation calling for the creation of an artificial intelligence "Godhead" that humans would worship.

A recent report has found that four in 10 jobs are at risk of being replaced by robots. It said 38 per cent of US jobs will be replaced by robots and AI by early 2030s.

But all this is more of an ultra-conscious thought than a reality and can today be not taken as a firm basis of pulling our punches in the endeavour to make the dream of true artificial intelligence come true as most developers and leaders say.

But still it is good to be ready then to believe blindfoldedly. It is never too early to prepare for the future. To get ready for automation's advances tomorrow, executives must challenge themselves to understand the data and automation technologies on the horizon today. But more than data and technological savvy are required to capture value from automation. The greater challenges are the workforce and organizational changes that leaders will have to put in place as automation upends entire business processes, as well as the culture of organizations, which must learn to view automation as a reliable productivity lever. Senior leaders, for their part, will need to "let go" in ways that run counter to a century of organizational development.

References

- ✿ www.independent.co.uk
- ✿ www.mckinsey.com
- ✿ www.deccanchronicle.com
- ✿ www.courseera.org
- ✿ www.sas.com.