EDITOR'S NOTE

Artificial Intelligence and Its Capability

The "Artificial Intelligence (AI)" notion occurred in 1959 and, as stated by Raymond Kurzweil − a pioneer in the AI field, the artificial intelligence id "the art of creating machines able to carry out functions that would need intelligence if carried out by humans".

AI is increasingly involved in our life and tends to reshape our world. Under such circumstances, understanding the significance of AI notion and its functionality becomes vital for us.

In its infancy, AI looked more like a theme belonging to the science-fiction literature: talking machines, thinking machines, sensitive machines, etc. Recent times have shown that science-fiction ideas may become real. There is no doubt that, during the last decades, significant achievements have been obtained in this inter- and trans-disciplinary research field.

There has been a long debate on Artificial Intelligence, Machine Learning and Profound Learning. It is hardly understandable the difference between these notions and their interconnection.

Artificial Intelligence is a branch of computer science that aims at developing intelligent machines and imitating human intelligence.

Machine Learning is an AI branch that aims at giving machines the capability of "learning". This task is accomplished by using algorithms that exploit input data to identify models, so that machines become able to make decisions and predictions, i.e. become "intelligent". In this way, machines do not need to be programmed for each specific action. As stated by Arthur Samuel in 1959, Machine Learning is "the science that gives computers the capability of learning without being explicitly programmed".

On the other hand, **Profound Learning** is a branch of Machine Learning representing the most advanced domain of Artificial Intelligence. The main objective of Profound Learning consists in giving machines the capability of learning and thinking as close as possible to humans.

According to different specialists, AI is able to enhance the efficiency of industrial companies more significantly than automation. This proves AI capability to transform our lives at individual, organizational and social levels. Specialists estimate that AI will have a contribution of over 15 trillion USD in the increase of world economy, which is more than the cumulated production of several countries of today.

AI progress has caused an active debate on the possible threaten against humanity represented by AI: physical threaten (extermination of humans by robots exhibiting AI capabilities) or economic threaten (in order to avoid it, the basic universal income has been recently introduced for testing in some countries).

In a context characterized by the possibility of quantifying the major economic effects of AI, developing countries (including Romania) should exploit the effects and consequences of new technologies to reduce the lag separating them from advanced countries.

At the basic level, it depends on specialists whether these achievements will have a positive economic impact or will become a new threaten for humankind.

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