5 machine learning trends that will define 2017

Machine learning is at the core of many innovations that are set to improve our daily lives this year.

By , *star* Advisor, CIO | May 15, 2017 4:29 AM PT

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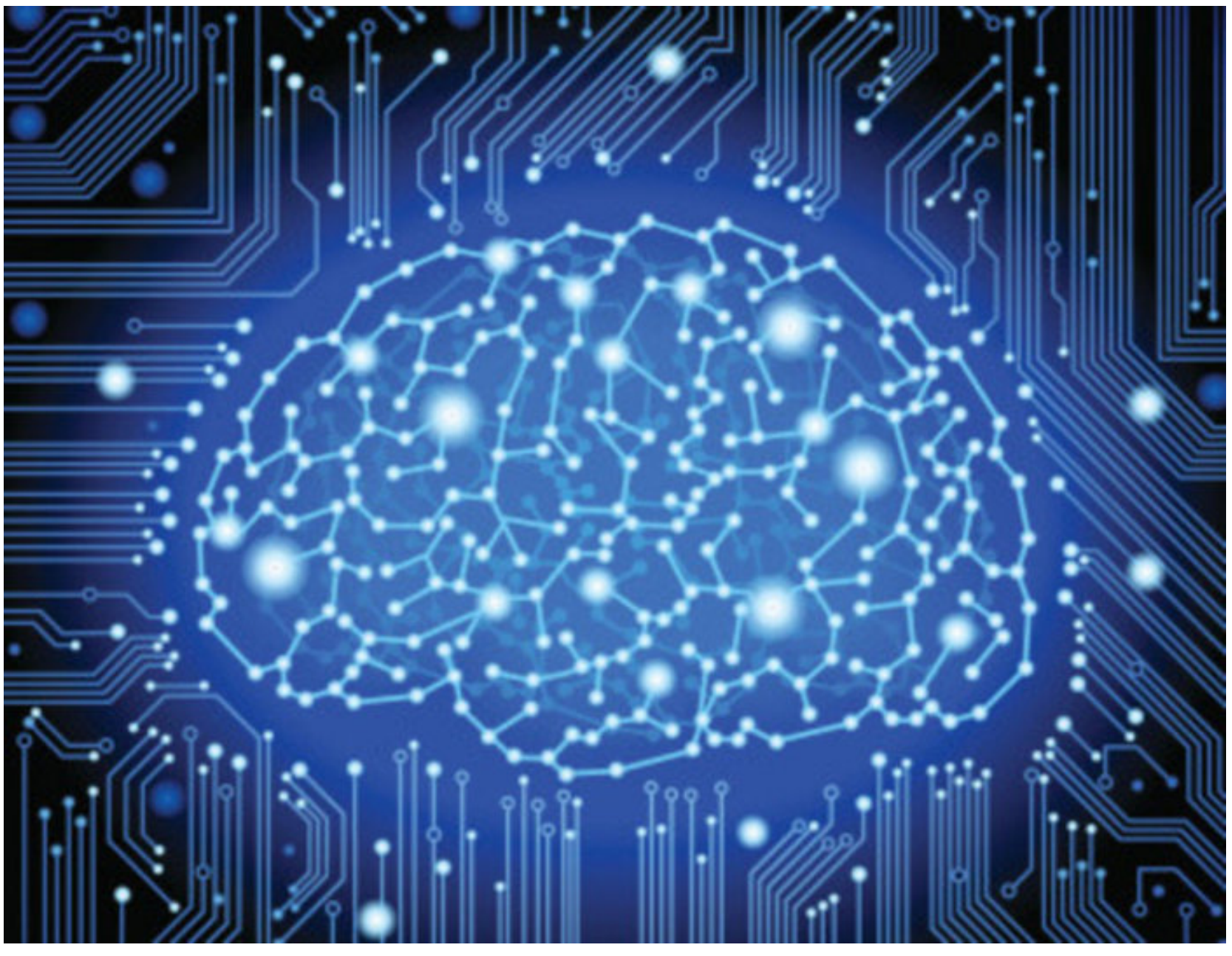

Credit: Tej3478

Machine learning has been quietly working in the background for years, powering mobile applications and search engines. But recently it has become a more widely circulated buzzword, with virtually all recent technological advancements involving some aspect of machine learning. An impressive rise in data and computing capabilities has made this

exponential progress possible.

The remarkable growth in sophistication and applications of machine learning will define the technological trends of 2017. Their effects will depend on whether the application adds value and benefits to society as a whole and whether it has the potential to solve real world problems. Here are the five major trends that will define machine learning in 2017.

1. Machine learning in finance

The finance industry has historically used machine learning in consumer services such as credit checking and fraud investigation. But recently, with more accessible computing power and open source tools, the financial sector is using machine learning in applications ranging from loan approval and risk assessments, to asset management.

A recent advancement called sentiment analysis involves considering the impact of social media and news trends on commodities prices. Machine learning is employed to replicate the human response to current affairs for decision-making in hedge fund trading. Dr Ben Goertzel, of the OpenCog Foundation, stated that what is lacking in current AI is "cognitive energy" which integrates physiological and biochemical processes in an amalgam of interconnections and associations, giving rise to human intelligence. The foundation has made some headway into bringing this component to AI. The hedge fund trades entirely independent of human interaction and uses probabilistic logic to analyse and interpret the daily market data, news and social media, making predictions and deciding on the best course of action.

This application will definitely add value to market sectors and transform the way the economy trades. It takes into consideration influential factors on the markets, such as trending news, thus making predictions that humans don't have the capacity for.

2. Autonomous driving

With an automobile death rate of 1.2 million people per annum and 90

percent attributed to human error, the idea of autonomous vehicles has undeniable merit. AVs comprise a variety of sensors to assess distance, speed and terrain. Consequently the vehicles are more equipped to deal with an emergency that their human counterparts.

To illustrate the potential, imagine this scenario: An AV is stationary at a red light in danger of impact from behind by a fast approaching car. The AV suddenly accelerates into the intersection to avoid the collision and simultaneously changes the lights to red. The motivation for this type of technology is to preserve life and having fleets of AVs on the streets will exclude human error, road rage and other traffic issues from the dynamic.

3. Space exploration

In the field of space exploration, autonomous driving is not a new concept. The AutoNav has been driving the Mars rover since 2004. The radiation and reliability issues that have kept space computing on the back foot are being alleviated. Investigation into improvement of the reliability of the Mars rover is well underway, with machine learning at its core. By using a "vision-based terrain classifier and risk-aware path planner", it aims to impart the rover with human-like thinking regarding risk, allowing a safer traverse.

By being able to remotely navigate more accurately will allow exploration of extreme environments. For example, investigation of the subsurface ocean of Europa is now a distinct possibility.

4. Healthcare and medicine

Precision medicine is challenging the traditional broad spectrum approach. This new form of healthcare involves constant biometric data streamed by wearables, algorithms and molecular tools.

This develpoment is changing medicine, allowing non-subjective identification of symptoms and offering platforms to interpret and connect data from Ebook Week. The success of this system hinges on the

development of precise and consistent machine learning tools for deciding on the best treatment regime based on collected data specific to the individual.

This overcomes cultural and language barriers and thus has inherent value for the medical profession and can also mitigate the emotional responses of human doctors that often detracts from accurate diagnoses and treatment protocols.

5. Humanitarian aid

Drones are the logical solution to getting supplies to remote and dangerous locations. This is especially true for locations great distances from the control centre. Qualcomm, unveiled a drone platform that uses flight control and machine learning. Machine learning is not a new concept in drone technology, but what make this particular version superior, is that the drone can actively learn about the environments it is occupying, without prior knowledge. True autonomous flight will be valuable for humanitarian aid services.

Machine learning is at the core of many innovations that are set to improve our daily lives. In 2017, they will also have a discernible positive consequence for society and the economy.

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