

How Artificial Intelligence is Advancing Science

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With 2019 dubbed the “Year of Artificial Intelligence,” artificial intelligence is one of the hottest topics in technology at the moment. AI’s nearly limitless possibilities promise to change the world as we know it.

Yet, don’t wait for the pop culture and science fiction portrait of artificial intelligence as human-like robots and computers designed to take over the world. This isn’t reality. Artificial intelligence in 2020 looks more like Apple’s Siri, Amazon’s Alexa, self-driving cars, Nest thermostats, and even movies recommended by Netflix’s algorithm.

Of course, artificial intelligence is about more than just recommending a great murder mystery series or helping drivers avoid blind spots while driving. The power of AI is transforming nearly every industry - especially the world of science.

From powerful deep learning projects created by [React developers](#) to scientists further developing the world of medicine, the true applications of artificial intelligence are only starting to present themselves and being applied to their full advantage.

What is Artificial Intelligence?

To put it as simply as possible, artificial intelligence systems work by creating a neural network that collects binary data, processes it, and then produces a calculated decision. It also enables machines to learn from previous experience and perform human-like tasks.

AI is able to automate high-volume, repetitive tasks that would have otherwise taken humans exorbitant amounts of time after human inquiry sets up the system. It can add intelligence to existing products (such as Siri and Alexa) while analyzing and digging deeper into data. Through its deep neural networks and progressive learning algorithms, AI achieves incredible accuracy that was previously considered impossible and helps get the most out of data itself.

The Application of AI in Science

The power of artificial intelligence applies to a wide variety of industries as it is able to reduce the time needed for formerly labor-intensive tasks while also providing results by mimicking human intellect. This power is especially useful for researchers in the field of scientific discovery.

Although AI-powered applications in scientific research are still somewhat in their infant stages, the realm of possibilities for applications in the field is nearly limitless.

New Discoveries - With the combination of artificial intelligence's deep learning capabilities and a bit of human intellect, it's possible to study previous areas of scientific exploration in greater depth and allow for new discoveries. For example, pharmaceutical companies have been using AI to extract information from written materials and academic papers to create new hypotheses to test. This may lead to the discovery of new medicine. Scientists are also using AI to look into all of the possible mutations of human DNA, which is a task otherwise impossible for mere humans.

Analysis of Data - It can be incredibly difficult for researchers to analyze the enormous amounts of data in their research for insights and patterns. As the amount of data researchers have been able to pull has increased over time, so has this difficulty. With the power of deep learning created by AI, computers are able to take said information, analyze it, and predict the results. While this would take humans hours or days, computers are able to accomplish it in seconds.

Improved Journaling Processes - Part of scientific research is academic publishing. One of the biggest issues with publishing the research is looking for discrepancies in data, references, statistics, and other aspects. Another perfect application for artificial intelligence is the processing of hundreds of academic journal submissions at a time. The power of AI simplifies the time-consuming, exhausting process of verifying and bringing credibility to the research that must go into the review of papers for academic journals.

Literature Reviews - The basis of any and all research is data. An important step when researching data is the reviewing of existing materials about the topic. This process can be an overwhelming one that may take up a considerable amount of time for the researcher. AI-based exploration tools can complete this task in a quick, efficient manner.

The Future of AI and Science

The future is nearly limitless when it comes to the power of artificial intelligence and its applications in science. Eventually, the human aspect of science will be removable once AI is able to fully take over the responsibility of hypothesis formulation.

Until then, scientific researchers are continuing to push the boundaries of this technology and discover new components within it. Artificial intelligence will also become more accessible to other areas of science as well as other studies with the power of pre-trained models.

For example, TensorFlow.js for React Native and Expo applications is an open-sourced machine learning library that allows React developers to load pre-trained models and train new scratch models in a simplified process. AI through React development eases the work associated with the development of powerful front-ends that respond to real-time inputs from the users.

It's safe to say that there won't be a facet of business or science that is not inevitably touched by artificial intelligence in the near future. This groundbreaking technology is sure to further change and advance the world of science as we know it.