

An Overview of Cognitive Computing

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DESCRIPTION

Cognitive computing is that the use of computerized models to simulate the human thought process in complex situations where the answers could also be ambiguous and unsure. The phrase is closely related with IBM's cognitive computing system, Watson. Cognitive computing overlaps with AI and includes many of an equivalent underlying technologies to power cognitive applications, expert systems, neural networks, robotics and computer game.

HOW COGNITIVE COMPUTING WORKS

Cognitive computing systems can synthesize data from various information sources, while weighing context and conflicting evidence to suggest the simplest possible answers. To realize this, cognitive systems include self-learning technologies that use data processing, pattern recognition and tongue processing to mimic how the human brain works.

Using computer systems to unravel the kinds of problems that humans are typically tasked with needs vast amounts of structured and unstructured data, fed to machine learning algorithms. Over time, cognitive systems are ready to refine the way they identify patterns and therefore the way they process data to become capable of anticipating new problems and model possible solutions.

To achieve those capabilities, some features that cognitive systems may express are:

Adaptive

Cognitive systems must be flexible enough to find out as information changes and as goals evolve. The systems must be ready to digest dynamic data in real time and make adjustments because the data and environment change.

Interactive

Human-computer interaction may be a critical component in cognitive systems. Users must be ready to interact with cognitive machines and define their needs as those needs change. The technologies must even be ready to interact with other processors, devices and cloud platforms.

Iterative and stateful

Cognitive computing technologies also can identify problems by asking questions or pulling in additional data if a stated problem is vague or incomplete. The systems do that by maintaining information about similar situations that have previously happened.

Contextual

Understanding context is critical in thought processes then cognitive systems must also understand, identify and mine contextual data, like syntax, time, location, domain, requirements, a selected user's profile, tasks or goals. They will draw on multiple sources of data, including structured and unstructured data and visual, auditory or sensor data.

ADVANTAGES OF COGNITIVE COMPUTING

In the field of process automation, the fashionable computer system is about to revolutionize the present and legacy systems. Consistent with Gartner, cognitive computing will disrupt the digital sphere unlike the other technology introduced within the last 20 years. By having the power to research and process large amounts of volumetric data, cognitive computing helps in employing a computer system for relevant real-life system. Cognitive computing features a host of advantages including the following:

Accurate data analysis

Cognitive systems are highly efficient in collecting, juxtaposing and cross-referencing information to research a situation effectively. If we take the case of the healthcare industry, cognitive systems like IBM Watson helps physicians to gather and analyze data from various sources like previous medical reports, medical journals, diagnostic tools and past data from the medical fraternity thereby assisting physicians in providing a data-backed treatment recommendation that benefits both the patient also because the doctor. Rather than replacing doctors, cognitive computing employs robotic process automation to hurry up data analysis.

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Leaner and more efficient business processes

Cognitive computing can analyze emerging patterns, spot business opportunities and lookout of critical process-centric issues in real time. By examining a huge amount of knowledge, a cognitive computer system like Watson can simplify processes; reduce risk and pivot consistent with changing circumstances. While this prepares businesses in building a correct response to uncontrollable factors, at an equivalent time it helps to make lean business processes.

Improved customer interaction

The technology is often wont to enhance customer interactions by implementing robotic process automation. Robots can provide contextual information to customers without having to interact with other staff members. As cognitive computing makes it possible to supply only relevant, contextual and valuable information to the purchasers, it improves customer experience, thus making customers satisfied and far more engaged with a business.

COGNITIVE COMPUTING VS. ARTIFICIAL INTELLIGENCE

While artificial intelligence's basic use case is to implement the simplest algorithm to unravel a drag, cognitive computing goes a step beyond and tries to mimic human intelligence and wisdom by analyzing a series of things. In comparison with AI, cognitive computing is a completely different concept.

- Cognitive computing learns and imitates the human thought process

Unlike AI system that just takes care of a given problem, cognitive computing learns by studying patterns and suggests humans take relevant action supported its understanding. Within the case of AI, the system takes full control of a process and takes steps to finish a task or avoid a scenario by employing a pre-defined algorithm.

While as compared, cognitive computing may be a different field altogether where it is an assistant rather than the one completing the task. During this way, cognitive computing gives humans the facility of faster and more accurate data analysis without having to stress about the incorrect decisions taken by the machine learning system.

- Cognitive computing does not throw humans out of the image

As discussed above, cognitive computing's main aim is to help humans in deciding. This endows humans with superior grade precision in analysis while ensuring everything is in their control. For instance, let's take the instance of AI within the healthcare system. An AI-backed system would make all decision regarding treatment without consultation with a person's doctor, while cognitive computing would supplement the human diagnosis with its own set of knowledge and analysis which helps in improves the standard of decision and adds a person's touch to critical processes.