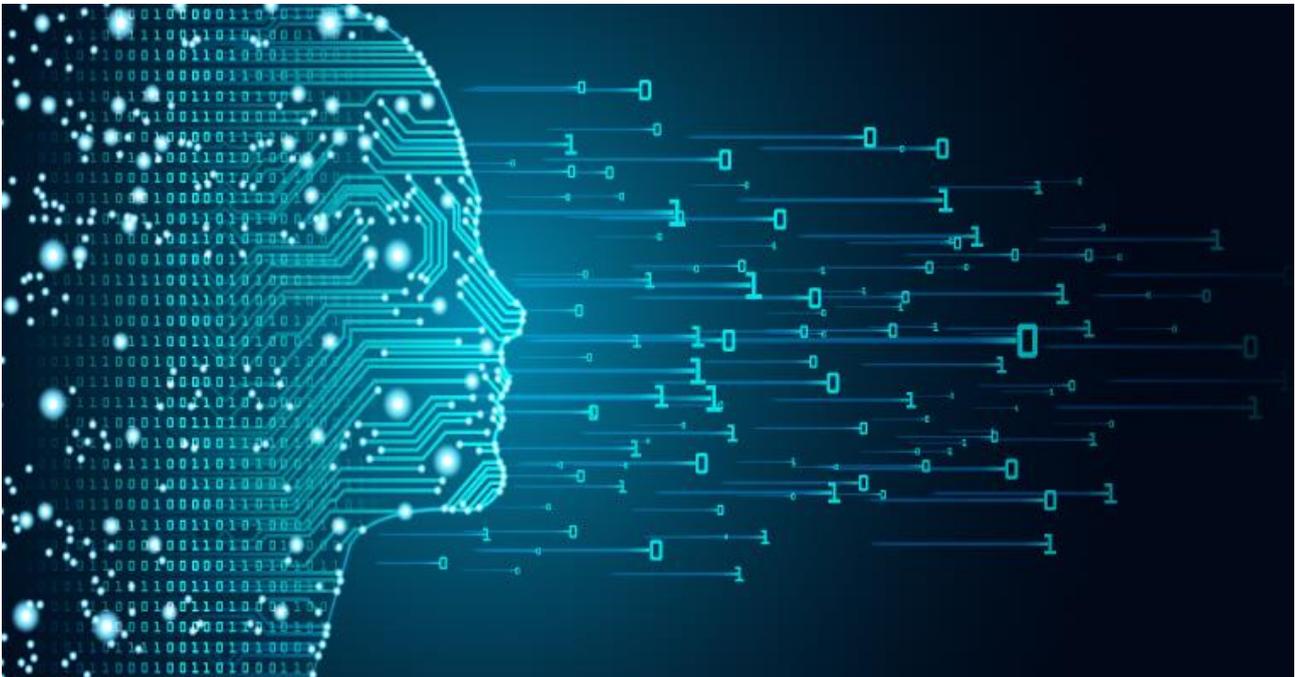


Connecting IoT and Big Data- A Solution-Oriented Approach

by **Satya K Vivek** | December 26, 2022



Digital technologies are developing at a rapid pace; they are making things simpler and more effective for individuals and businesses. Internet of Things (IoT) and Big Data are two major technologies driving this growth. IoT and Big Data have significant influence on enterprises and individuals as the insights from the analysis and interpretation of data, drive decision making across all levels.

IoT and Big Data:

IoT technology provides connectivity to most objects used in daily life. During the initial phase of the digital era, the focus was solely on enabling Internet access for computers and telephones. But with the arrival of IoT, the scope of prevalent technologies has expanded in a big way.

Today, it won't suffice if only the phone and computer have Internet connectivity. With the advancement of IoT, any item/ objects such as watches, televisions, automobiles, microwaves, machines, air conditioners, and devices can have Internet connectivity. Users are able to monitor and control all these things from remote locations.

All IoT devices that are connected generates huge volumes of data. There are many other data sources as well. All these data could be of varying formats like numeric & texts, images & videos, analog data such as current & voltages, and so on. Analysing this huge volume of unstructured data

requires models that are based on Artificial Intelligence and Machine Learning. The advancements in AI & ML techniques are driving strategies and day-to-day operations across the world.

IoT and Big Data connectedness- More points:

Let us get into some details on the connection between IoT and Big Data in providing business and operational solutions to organizations.

- Companies can adopt a solution-centric approach in their day-to-day operations, due to insights available to them in real-time. This enables quick decisions that leads to resolutions to issues and events, irrespective of its complexity.
- Businesses can now easily get precise information about user behaviour & feedbacks. Using these insights, they could make changes or add new features to their products and services have become easier. In the long- run, this pivotal aspect makes sure that the organization will face no hassles in withstanding the competition.
- Factories/ plants are now able to identify problems in machinery/ equipment well before it occurs and by being proactive, they could easily avoid mishaps.
- IoT and Big Data provides insights into the performance of each production process and production line in a factory. Also, this enables the automation and optimization leading to significant gains with reduction of cost and time of production.
- The connectedness between IoT and Big Data is so positive that both perfectly complement each other. As there is a steady rise in the number of IoT devices, we are witnessing a simultaneous growth in technologies aimed at analysing Big Data. In the same way, with the surge in data analytics technologies, more and more organizations and people are integrating IoT into their daily activities.

IoT and Big Data- Challenges:

We still find many companies that are not fully leveraging the potentials of IoT and Big Data. There are many challenges like cyber security and user privacy to be addressed. AI and ML techniques are still evolving, and many organizations faces acute talent shortage.

Significant progress is being made in the fields of IoT and Big Data. The existing challenges are being addressed by organizations across the world. How successful an enterprise in leveraging these technologies will determine their market performance and position. The good news is that the technology maturity is improving over time and many organizations are being able to leverage and make progress.