The Magnificent Benefits of IoT and AI

Leveling up the game of IoT using AI

The past decade has realized that the way manufacturers view their machines can be transformed if they use artificial intelligence coupled with real-time data analytics and communication. When artificial intelligence is combined with the power of IoT, the generation of smart manufacturing can be unlocked as these technologies have been creating waves in the sector individually. By combining all these powers, the advantages become manifold. According to Nick Bostrom, a Swedish philosopher, "machine intelligence is the last invention that humanity will ever need to make." For such machines, AI can act as its brain, which collects, processes, and uses vital information retrieved from devices connected through IoT, which acts as the nervous system for sending and receiving signals.

By using both technologies, the system becomes intelligent enough to make decisions for itself on its own, which also forms the AIoT or Artificial Intelligence of Things. By 2026, the global AIoT sector is expected to grow by more than 78.3 billion US dollars, accounting for approximately 40% compound annual growth rate, as reported by Research and Markets.

Integration of AI with IoT

IoT includes technologies such as enhanced connectivity, cloud computing, machine-to-machine (M2M) communication, and various others that enable the connectivity of the machines, provide storage for data, and convert it into meaningful insights. On the other hand, AIoT is used to enhance the capabilities of IoT, which offers numerous benefits to the markets that make use of technologies.

Previously, manufacturers were satisfied with their machines' ability to perform optimally and make their own decisions upon the data stored and processed. But with the integration of AI into these machines, the manufacturers can close the loop as the devices can spontaneously take action on their learned processes to perform in the best manner. But to make AIoT more comprehendible and viable, data management systems need to be added along with the machines so that they can support speedy decision-making. Storing data on the cloud seems feasible as data is analyzed near its source, but AIoT can up this game as the data analysis would be done at the edge itself, the point where the data is collected.

Reaping the Benefits of AIoT

To be able to make use of AIoT at the edge, the development of its offline model needs to be done, along with training it using the existing stored datasets. This training would help ensure that the model meets the requirements and expectations. Once the offline model passes the conditions, the sector leaders can implement it by exporting it online and using live data fed on a real-time basis.

But easier said than done, testing the model based on stored data could produce different results from testing it on live data. This is because live data may not be categorized or filtered and may lead to a chaos of knowledge as each data set may arrive at different time intervals. For this purpose, data filtration needs to be done before AIoT ultimately uses it. At this point,

edge analytics is presented by Brabo Edge Platform, manufacturing connectivity and intelligence platform developed by Solulever, a Dutch technology startup. The Industry 4.0 platform helps collect the data in real-time from the connected IoT devices or edge devices and prepares them before being fed to AIoT. The data is made scalable after being received in different formats from multiple sources and then analyzed. By harmonizing the data, the devices become more intelligent to make their own decisions and even act upon them on their own, which results in maximum output and reduced wastage.

Even though individually, all of these technologies render great power to the manufacturing industry, when combined, they become indomitable. Suppose enterprises start integrating AIoT and Edge technologies from companies like Solulever. In that case, they can uncover these technologies' full potential and benefits to make the processes optimized, fast and efficient.