The Arrival of Intelligent Edge Devices

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Just like how people have benefited, globally, from the development of faster and improved modes of communication, so do technologies. The global shift towards digitization has placed immense pressure on connectivity. As connected technologies such as road sensors and navigation systems, communicate with each other, they also collect data that need to be quickly processed and executed. However, the massive amount of data which these devices generate could potentially cripple the IT infrastructure.

Further to the focus on improving communication between people, with the advent of emerging technologies, it is timely to expend efforts to enhance the communication between technologies. That is what edge computing aims to do.

By merging together two separate problems, edge computing attempts to solve them with one solution. On the one hand, the constraint on cloud data centers to handle increasing amounts of data is about to reach a breaking point. On the other hand, Artificial Intelligence (AI) systems consume information at such a speed that there does not seem to be enough data to process.

With real-time databases and AI, real-time insights are often provided by the intelligent edge devices for the various areas of improvement in many industries. Last-mile delivery is made faster and more efficient with features such as smart tracking and real-time route navigation, by providing timely insights to customers as they make decisions at the shop front. Edge intelligence can even provide predictive risk assessments for healthcare professionals and promote better health awareness.

Intelligent edge computing is transforming the way data is being handled, processed, and delivered from various devices around the world. With the growth of IoT (internet-of-things) devices growing at an explosive rate, and together with new applications that need real-time computing power, this imminent need continues to drive edge-computing systems.

Fundamentally, edge computing brings computation and data storage closer to the devices where data is being collected. Especially real-time data, such a practice helps to ease latency issues which will affect an application's performance. Furthermore, companies can achieve tremendous savings by processing locally and immediately, thus reducing the quantity of data that needs to be processed in a centralized or cloud-based location.

With an intelligent edge, remote or decentralized nodes can be empowered to do different kinds of data handling that may have traditionally been done at a central point in a system. THs enables the edge network components or nodes to process the data intelligently, possibly grouping, refining, filtering or encrypting it before transmitting it over to the data warehouse. This further improves the agility of data-handling systems, as well as their safety. Traditionally, it may be inefficient, and, possibly leave the system inherently more vulnerable, if the raw data is voluminously transmitted without adequate care.

We can expect that disruptions from AI are here to stay, but many company leaders are not familiar with what to expect from AI or how it fits into their business model. AI technologies could lead to a performance gap between companies that fully absorb AI tools across their enterprises over the next five years compared to those that do not by 2030. And, deploying Intelligent Edge devices can make the difference.

One major difference is the AI's approach to data management. Natively, AI algorithms are not necessarily "intelligent", not vastly different from traditional computing. However, they learn inductively by analyzing data. While most leaders are investing in AI talent and have built robust information infrastructures, other companies lack expertise in analytics and sufficient access to data. From past experience, it is clear that several misunderstandings exist about the resources needed to train AI. Companies successful in using AI not only need to have a deeper appreciation about how to produce AI, they are also more likely to have senior leadership support and have developed a business case for AI initiatives.