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Why workstations are key to building an intelligent enterprise?

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The value of business intelligence based on insights derived from big data is now widely recognised. In today's rapidly changing business landscape, organisations must be able to make well-informed strategic decisions quickly and efficiently if they are to have the agility required to respond effectively to market shifts. To do so, they need to be able to process vast data sets at lightning speed and generate useful insights into customer behaviour, market trends, and potential opportunities for growth – insights that can inform actions that have a real impact on the bottom line.

The problem is that traditional methods of data analysis tend to be slow and prone to human error, especially when large volumes of data are involved. This is why businesses are increasingly embracing advanced artificial intelligence (AI) algorithms which can identify trends and patterns in large data sets that human analysts would most likely miss. AI-powered analytics not only enables businesses to react quickly to changes, it also helps them predict future financial outcomes more accurately so they can be more front-footed in managing risks and opportunities.

This is all good and well, but AI-driven analytics demands a large amount of computing power. AI practitioners in the business world often rely on cloud-based resources to train their models, but this can be very costly over time. With the right use of technology and workstation hardware like the Lenovo ThinkStation P7 or PX, businesses stand to save millions of dollars by delivering faster AI workstreams locally rather than through the cloud.

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How organisations use AI and Data Science to enhance decision-making

Business leaders in every industry have been attuned to the power of data-driven insights for a number of years now. However, many organisations are still struggling to fully exploit the data that is available to them. According to Accenture, 87 percent of all employees believe in the value of data, but only 25 percent think they'd be capable of leveraging it effectively.

Though it is easy to feel overwhelmed by the mountains of data being generated every day in our hyperconnected world (currently about 5 exabytes, or 2.5 billion gigabytes, according to Accenture), the right use of technology can make the challenge of analysing all that data much less daunting.

Due to its ability to collect vast quantities of unstructured data and transform it into easily digestible and accurate information in the blink of an eye, AI is critical to any organisation's data strategy today.

The following are some of the key capabilities delivered by AI:

Predictive Analytics
AI can be used to analyse historical data and predict future trends, patterns, and behaviour, thereby allowing an organisation to make informed decisions based on data-driven insights.

Natural Language Processing
Natural language processing (NLP) is a branch of artificial intelligence that focuses on enabling machines to understand, interpret, and generate human language. It can provide valuable insights into human language data through sentiment analysis, text classification, named entity recognition, machine translation, and text summarisation.

Anomaly Detection
Organisations can use AI algorithms to detect unusual patterns and events in data that may indicate potential problems or fraud. This allows them to better identify potential risks and take appropriate actions.

Data Visualisation
Organisations can use data visualisation tools to create interactive dashboards and reports that help decision-makers visualise data and identify trends, patterns, and insights that may be difficult to see in raw data.

Computer vision
Using AI, machines can be taught to analyse, process, and make decisions based on digital images or videos. This has a wide range of applications, including object recognition, face detection, autonomous vehicles, medical imaging, and more.

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AI and Content Creation

Organisations are increasingly utilizing AI, particularly large language models (LLMs) and generative AI, to streamline content creation. LLMs like GPT are able to generate written content, from articles and marketing copy to chatbot responses, by drawing on their extensive language knowledge. This enables organisations to produce high-quality, consistent content at scale while saving time and resources.

Generative AI, on the other hand, extends content creation to multimedia formats, generating images, videos, and animations. This technology empowers organisations to create visually engaging marketing materials and custom visuals swiftly and efficiently.

In an era where captivating content is essential for audience engagement, the integration of AI in content creation is becoming increasingly widespread.

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How workstations
unlock the power of AI

Companies seeking to use AI to drive better business outcomes often turn to on-demand computing power and resources enabled by large cloud service providers instead of investing in expensive hardware. On the face of it, this makes sense. These powerful, unlimited resources are scalable and can be accessed quickly and easily with a low financial barrier to entry. However, since this approach incurs monthly fees, it can end up being very costly in the long run, especially as the complexity of workflows increases, which in turn leads to higher performance requirements and therefore higher subscription fees.

Thanks to recent advances in workstation technology, it is now possible for any organisation to access the computing power needed for AI workflows like data preparation, model training, and sandbox testing without having to rely on cloud computing. Lenovo's most powerful workstation to date, the Lenovo ThinkStation PX, offers desktop supercomputing capabilities and performance, allowing AI practitioners to work with every piece of data at their disposal without difficulty.

Featuring a thermally advanced, rack-optimized chassis co-designed with Aston Martin, the latest dual 4th Gen Intel Xeon Scalable processors, up to 120 cores, and support for up to four NVIDIA RTX 6000 Ada Generation GPUs, this workstation powerhouse runs the most complex computing workloads seamlessly—whether desk-side or in a data centre.

Our P-series workstations come with an ingenious modular design and tool-less access, making upgrades and customisations fast and simple to do. This allows AI practitioners to easily scale computing capacity according to their requirements.

Workstations like those in the Lenovo ThinkStation range are a boon for all organisations looking to benefit from AI and big data, but especially those organisations in industries that are subject to data governance requirements that restrict where data can be processed, like healthcare. Having the ability to process data on-site rather than via the cloud would allow organisations operating in these industries to work on data projects that have historically been out of reach for them.

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Conclusion

The role of AI in unlocking the power of data is only going to expand in the coming years and workstations will thus become increasingly integral to the modern enterprise's digital transformation journey.

These powerful machines provide the processing power and scalability required to support even the most extreme workloads as well as the flexibility to customise hardware and software configurations, enabling businesses to optimise their systems for specific use cases. Moreover, they can serve as intermediary devices that provide users with access to resources and services hosted in data centres/in the cloud, enabling efficient data processing and interaction with centralised infrastructure.

In short, workstations are the backbone of the intelligent enterprise, providing organisations with the computing power, speed, and tools they need to remain competitive and agile in today's rapidly evolving business landscape. As such, investing in high-quality workstations is an investment in the future success of any enterprise that seeks to stay ahead of the curve.

To find out how Lenovo ThinkStations, accelerated by Intel Xeon processors, can help you realise your vision and drive greater performance, check out our website.

ThinkStation PX

ThinkStation P7

ThinkStation P5

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