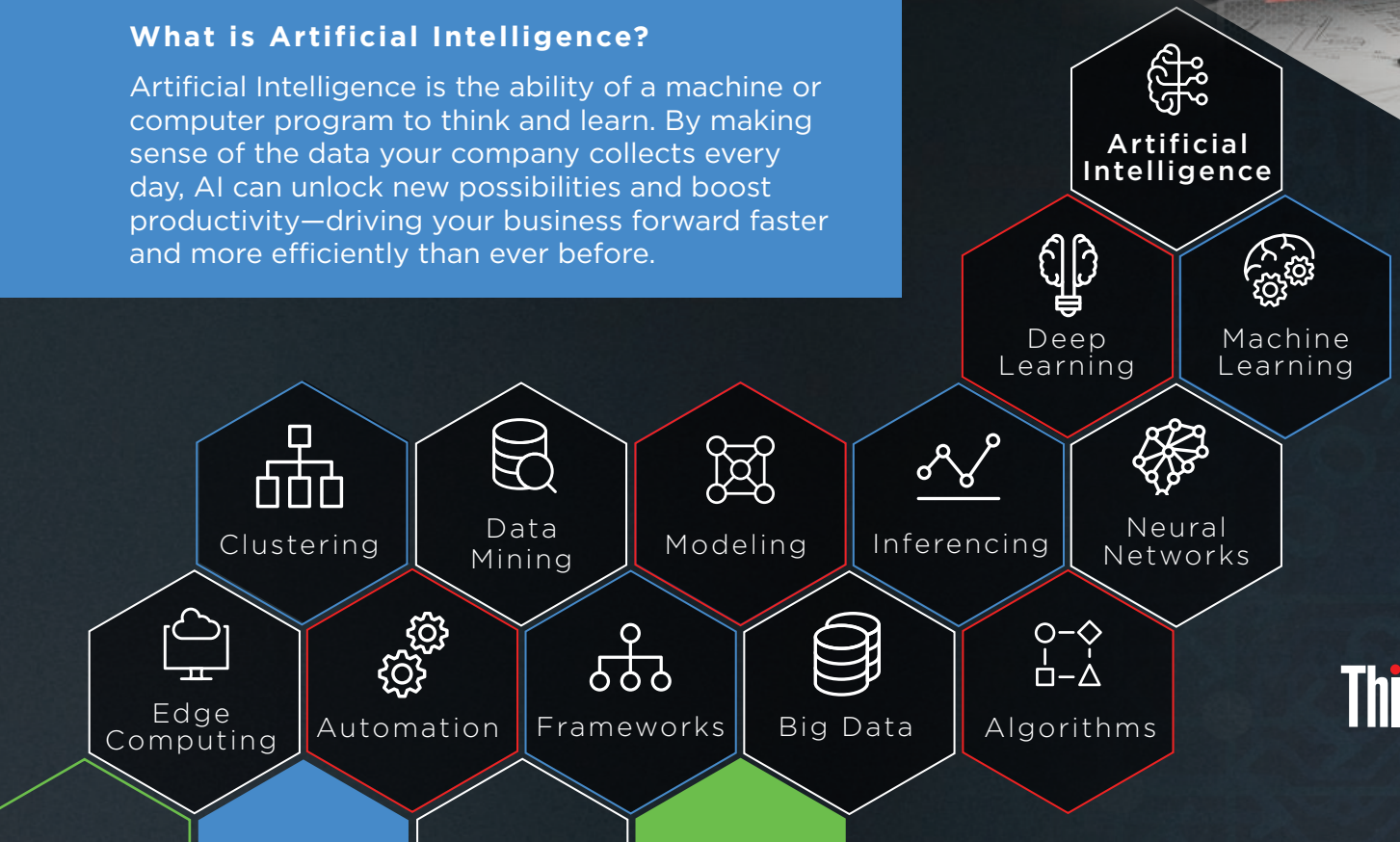
Lenovo™ Workstations for

CLIENT AI

As the adoption of artificial intelligence (AI) grows across industries, so does the need for education on how businesses can navigate AI strategies. Learn how Lenovo is helping to demystify the path to Artificial Intelligence by delivering powerful business intelligence to customers quicker and easier than ever before.

What is Artificial Intelligence?

Artificial Intelligence is the ability of a machine or computer program to think and learn. By making sense of the data your company collects every day, AI can unlock new possibilities and boost productivity—driving your business forward faster and more efficiently than ever before.



Artificial Intelligence is a tool, not a threat.

Discover how you can adapt these tools to enable your business.

Lenovo™

ThinkStation ThinkPad NVIDIA

Client AI

Client AI is the use of powerful client devices, like Lenovo Workstations, to create, model, develop, and ultimately deploy AI projects. Let's explore the three main types of Client AI:

Machine/Deep Learning

This development stage is the starting point of many AI projects.

Design/ISV

Leading independent software vendors add AI-enabled features to increase productivity.

Edge Computing

Deployed AI systems continue to learn by collecting and analyzing data in real-time.

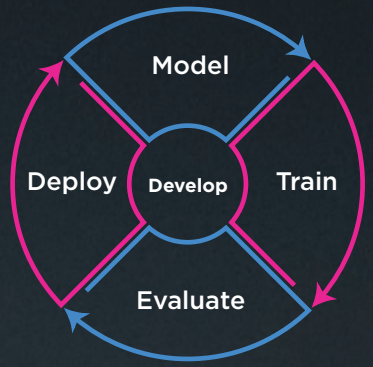
MACHINE/DEEP LEARNING

Machine learning is when a machine, such as a workstation, learns from data to identify patterns and make decisions. Deep learning, a subset of machine learning, uses very complex, deep data sets to extract features and similarities from within data as it learns.

The starting point of AI projects

AI developers train complex models (learning algorithms) using data such as text, images, voice, and video.

The ultimate goal of this AI development phase is to extract relevant insights that enable more efficient business processes.



Machine and deep learning projects require a workstation to handle the intensive compute power required for model training.

DESIGN/ISV

Powerful AI features are now being implemented into software applications from many of the world's leading independent software vendors, including Adobe®, Autodesk®, Chaos Group, Solidworks®, and more.

Lenovo Workstations power leading software applications

Thanks to AI, features like Generative Design, Analysis/Simulation and Rendering can now deliver massive performance and productivity gains.

ThinkStation ThinkPad

EDGE COMPUTING

Once an AI model has been refined and perfected, it is then deployed in the real world. The use of Lenovo Workstations at the edge allows you to acquire, analyze, sort, and inference data in near real-time.

The perfect edge device

Engineered to go where other's can't; at only 1L the ThinkStation P300 Tiny Series is the perfect intelligent edge device, providing the power and reliability needed for your AI solution.

Intelligent edge computing has been successfully deployed across a wide variety of industries such as healthcare, retail, and security.

INDUSTRIES THAT BENEFIT FROM AI

Across industries, businesses are already experiencing the benefits of AI toolsets built directly into the software packages they use every day.

In industries such as AEC, Design, Finance, Manufacturing, Medical, Media & Entertainment, Oil & Gas, Retail, Security and more; AI is enabling businesses of the future.

WHY WORKSTATION

Artificial Intelligence workloads, like machine and deep learning, can be notoriously compute intensive, requiring large amounts of power to complete model training tasks accurately and efficiently.

Training AI models can demand vast amounts of processing power, system memory, storage, and a number of GPUs.

Data scientists need to create their own sandbox-style environments for early model development at the desktop. Since these AI workflows need to learn from millions of parameters inside of every training model, it is critical that users can securely access their data with both speed and accuracy.

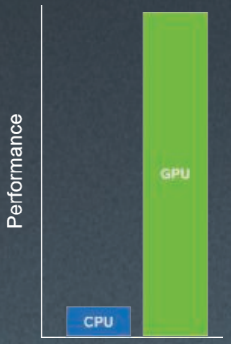
AI Solutions Require Power & Performance

- Intel® Xeon® Processors
- ECC Memory
- GPU
- Storage
- I/O & Connectivity
- OS & Frameworks
- Scalability & Design
- Security & Reliability

Graphical Processor Units (GPUs)

NVIDIA® Quadro® GPUs can do a lot more than just display pixels. Thanks to thousands of GPU processing cores, they can excel at many machine and deep learning tasks. RT real-time Ray-Tracing and AI-enabled Tensor cores, combined with larger GPU frame buffers, can deliver HUGE performance increases.

Using open-source GPU-accelerated libraries like NVIDIA RAPIDS for data science and data analytics, users can accelerate many end-to-end AI workflows from data preparation, model training & visualization.



WHY LENOVO

Lenovo Workstations are at the forefront of Artificial Intelligence: delivering maximum levels of performance, ultimate platform scalability, and the industry's highest levels of reliability.

The entire Lenovo Workstation P Series portfolio has been engineered from the ground up to not just meet, but exceed the rigorous performance requirements of today's most demanding AI workloads.

Systems, like the ThinkStation P900 Series, support the largest number of NVIDIA GPUs, up to 2x Intel Xeon Scalable CPUs, over 1TB+ of ECC Memory and the largest amount of data storage; delivering the highest possible levels of performance of any workstation.

6 REASONS WHY CHOOSING LENOVO MAKES A DIFFERENCE

- Industry's #1 for Workstation Reliability
- Tri-Channel Cooling
- Tool-Less Modular Chassis
- NVIDIA NGC/ RAPIDS Ready
- Low Acoustics
- Platinum Efficient PSUs

As configurations and hardware requirements can change from project to project, the tool-less, modular ThinkStation chassis allows for simple, easy upgrades. Perfect for demanding, yet constantly changing, business environments.

RECOMMENDED WORKSTATION CONFIGURATIONS FOR AI

ThinkStation P900 Series

Suitable for
Heavy Machine/Deep Learning
Demanding Design/ISV Projects

2x Intel® Xeon® Gold CPUs
384GB DDR4 ECC Memory
512GB + 1TB NVMe SSD
2x NVIDIA® Quadro® GV100 GPUs w/NVLINK
Ubuntu Linux or Microsoft Windows OS

ThinkStation P500 Series

Suitable for
Lightweight Machine/Deep Learning
Mainstream Design/ISV Projects

Intel® Xeon® W CPU
64GB DDR4 ECC Memory
512GB + 512GB NVMe SSD
1-2x NVIDIA® Quadro® RTX GPUs
Ubuntu Linux or Microsoft Windows OS

ThinkStation P300 Series

Suitable for
Edge Computing & Inferencing
Lightweight Design/ISV Projects

Intel® Xeon® E or Core™ I CPU
Max. 64GB DRR4 Memory
256GB NVMe SSD
NVIDIA® Quadro® P1000 GPU
Ubuntu Linux or Microsoft Windows OS
Mil-Spec Certified

ThinkPad P Series

Suitable for
AI Development
Mainstream Design/ISV Projects

Intel® Xeon® E or Core™ I CPU
Up to 128GB ECC Memory
512GB + 1TB NVMe SSD
Up to NVIDIA® Quadro® P5200 GPU
Ubuntu Linux or Microsoft Windows OS
Mil-Spec Certified