

AI Data Science

Accelerate scientific discovery

Stay a step ahead with AI-powered data science



Managing diverse, vast amounts of data at scale remains a core challenge for organizations implementing AI solutions.

Scalability and performance bottlenecks make it difficult to transition from proof-of-concept to full-scale deployment without compromising efficiency. AI model development and deployment demand **powerful workstations, AI optimized servers, intricate infrastructure configurations, specialized expertise, and operational costs** for integration, maintenance, and optimization.

Security, compliance, and risk management further complicate adoption, particularly in industries like retail, public safety, and media, where strict measures are needed to secure valuable corporate and customer data and ensure regulatory compliance.

Additionally, real-time AI applications — such as surveillance, digital asset tagging, and smart retail solutions — require low-latency processing across edge and cloud environments. **Optimized AI infrastructure reduces inefficiencies, minimizes delays, and addresses rising costs — making AI adoption an easier choice to deliver better business outcomes.**

Data is the foundation

As organizations scale AI adoption, they face growing challenges in managing complex data pipelines, integrating AI workflows, and ensuring real-time processing from the desktop to the data center and beyond.

Streamlining these processes, optimizing infrastructure, and enhancing AI-driven decision-making is crucial to data science. However, businesses must overcome key hurdles to fully leverage these technologies.

Challenges:

- **Complex AI data management:** AI applications must handle vast amounts of structured, unstructured, and semi-structured data — ranging from video and audio to text and images — requiring efficient ingestion, pre-processing, and storage. Without an optimized data orchestration layer, businesses face inefficiencies and delays in AI-driven insights.
- **Scalability and deployment bottlenecks:** Many organizations struggle to transition AI models from proof-of-concept to full-scale deployment due to infrastructure complexities, high operational costs, and the need for specialized expertise. AIOps-driven orchestration enables automated scaling, resource allocation, and streamlined deployment across edge, data center, and cloud environments.
- **Real-time AI processing and optimization:** AI applications in security, retail, and media demand real-time analytics, such as surveillance monitoring, digital asset tagging, and multilingual speech recognition. Without a well-integrated orchestration layer, businesses risk performance bottlenecks, increased latency, and reduced AI effectiveness in mission-critical scenarios.

Unlock actionable insights from your data

By integrating platforms like Centific AI Data Foundry with Lenovo's high-performance AI technology and NVIDIA Enterprise AI, organizations can accelerate predictive analytics, natural language processing (NLP), computer vision, recommender systems, and autonomous systems.

Key benefits:

- ✓ **Enhanced decision-making:** Uncover actionable insights from complex data to guide smarter business decisions.
- ✓ **Improved efficiency and automation:** Automate data analysis and repetitive tasks, streamlining workflows at scale.
- ✓ **Advanced personalization:** Enable tailored experiences by analyzing user behavior and predictive patterns.
- ✓ **Increased speed:** Access, store, and retrieve all your data everywhere — faster.

The joint solution is based on Lenovo Validated Design and NVIDIA's computing technology for AI acceleration and different sizing models (small, medium, large, custom) **tailored to customer requirements.** Typical use cases include multimodal AI (LLMs, VLMs, ASR), computer vision for retail, public safety, and hospitality applications.

Realizing a vision for AI development

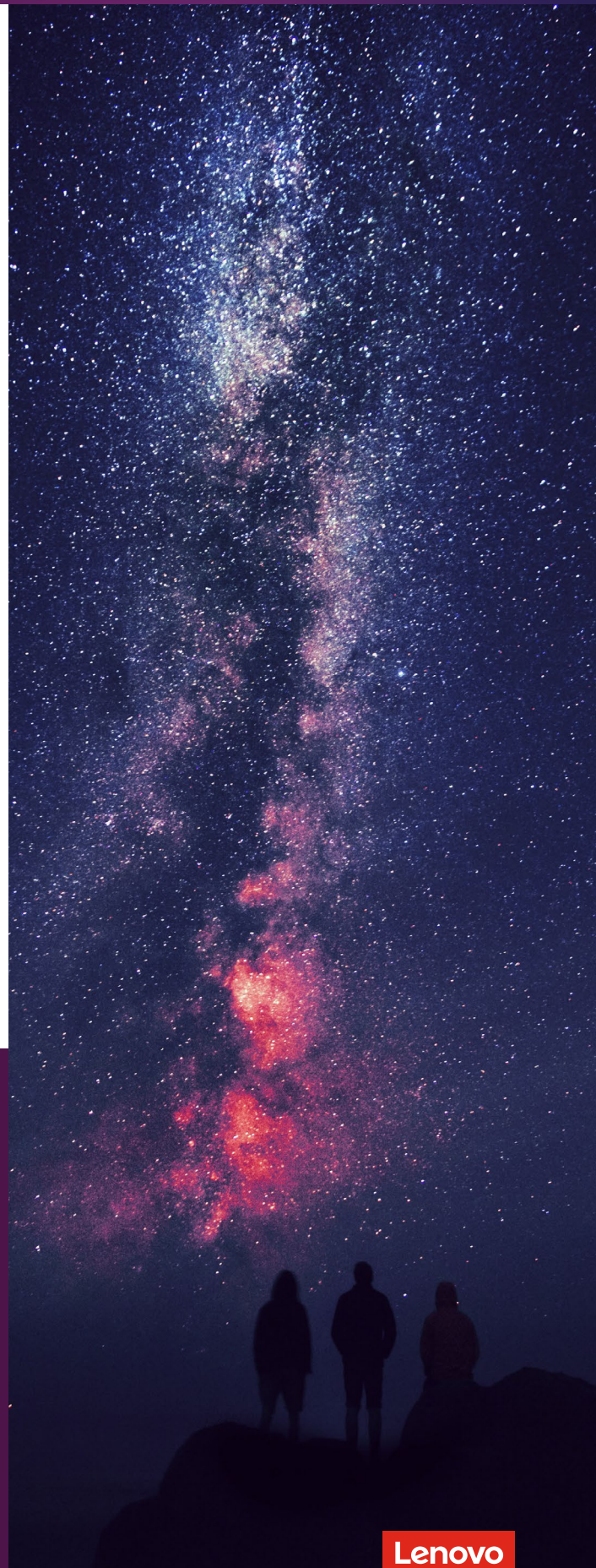
To enhance internal development processes and handle complex computer vision tasks locally, Focoos AI turned to Lenovo ThinkSystem servers, and experienced 90% faster time to market for computer vision solutions.

“Delivery was fast and the deployment went smoothly. We were able to get the Lenovo server up and running in just a couple of hours. With our web platform, we can quickly design and deploy optimized models for the Lenovo hardware, enabling us to support client use cases in just a few days.”

ANTONIO TAVERA
CEO, FOCOOS AI

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Lenovo



Empowering data science with hybrid infrastructure and intelligent devices

With a hybrid approach, data scientists can quickly iterate AI models, reduce latency, keep sensitive data local, and implement AI insights closer to users and data sources.



Lenovo ThinkStation® P8 Workstation

Lenovo ThinkEdge™ SE455i V3 Server



Provide speedier insights

Organizations need to be able to access, store, and retrieve AI insights from data faster — anywhere it's needed. Hybrid environments accelerate AI model training, experimentation, and inference by placing compute close to the data and the user, leading to quicker, more actionable insights.

- [Lenovo ThinkStation and ThinkPad® P Series workstations](#) provide local, high-performance compute that speeds up model development, prototyping, and fine-tuning without waiting on shared cloud resources.
- [Lenovo ThinkStation PGX](#) pairs seamlessly with workstation setups to unlock additional compute capacity for demanding AI development workloads, delivering on-desk flexibility without tapping into a data center or adding to the cost of public cloud.
- [Lenovo ThinkEdge](#) systems extend scalable AI performance to distributed locations, reducing latency, and improving local decision-making.

Grow with your data

Data scientists are analyzing ever-increasing amounts of data to enable their organizations to deliver more personalized experiences for their users and their customers. With hybrid infrastructure and devices, organizations are empowered to accelerate their AI initiatives from pilot to deployment, making scaling seamless.

- [Lenovo ThinkSystem](#) and [Lenovo ThinkAgile](#) are ideal for building scalable, secure on-prem or hybrid AI infrastructure where digital assistants require predictable performance with full data sovereignty.
- [Lenovo AI Services](#) meet you wherever you are in your AI journey to help you rapidly define, deploy, and drive real value from AI.

AI Data Science

Predict, prevent, and protect

Data science supports predictive analytics and intelligence by identifying patterns in historical data to forecast future outcomes. For AI systems, this means anticipating user needs, detecting risks, and optimizing performance. Lenovo's AI-optimized devices and solutions strengthen defense by running workloads in secure environments, enforcing data sovereignty, and reducing attack surfaces.

- Lenovo ThinkPad® provides hardware-level security and on-device AI processing to reduce reliance on the cloud, protecting sensitive data science workflows and model interactions.
- Lenovo ThinkShield offers hardware-rooted protection and prevents unauthorized access to sensitive data or commands.

Optimize for efficiency

Hybrid architectures play a crucial role in data science by optimizing costs, energy, and compute resources. By placing AI tasks on the most effective locations with the most efficient hardware, insights can be relayed faster while optimizing for both performance and sustainability.

- Lenovo Neptune® Liquid Cooling maximizes performance per watt by reducing energy consumption and enabling denser, more efficient AI compute clusters.
- Lenovo ThinkAgile automates workload placement across nodes and clusters, ensuring resources are used efficiently while minimizing operational overhead.



Lenovo ThinkAgile™ FX Series



Building the future of AI in data science

Data science teams need infrastructure that can handle massive, diverse datasets while supporting rapid experimentation and deployment. Lenovo's hybrid infrastructure, combined with validated AI software stacks, **provides the performance, scalability, and security** required to accelerate the full data science lifecycle.

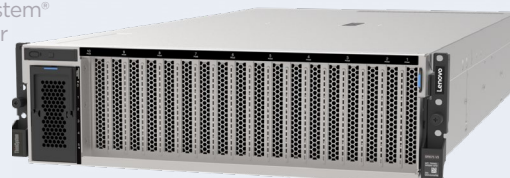
Through Lenovo Validated Design, and partnerships with NVIDIA and Centific, organizations can **streamline data pipelines, reduce deployment complexity, and operationalize AI faster**. These integrated solutions empower data scientists to build, train, and deploy multimodal models at scale that deliver real-time insights that transform business operations.

Centific's AI Data Foundry with Lenovo's high-performance AI infrastructure and NVIDIA Enterprise AI, can automate the steps that often slow down data science teams. Its modular architecture helps ensure reproducibility, simplifies model deployment, and supports continuous improvement through integrated monitoring and governance. Together, these capabilities **enable faster experimentation and more reliable movement of models** into production environments.

This integrated solution supports real-time and multimodal analytics, allowing data scientists to work effectively with video, sensor data, and unstructured data streams. NVIDIA Metropolis, NIM microservices, and NeMo Retriever enhance search, summarization, and inference workflows, giving teams the ability to build advanced applications **without constructing every component from scratch**.

Overall, the combined platform provides a high-performance, scalable, and secure foundation for modern data science, helping organizations iterate faster, operationalize models more reliably, and **deliver insights where they matter most** — from the data center to the edge.

Lenovo ThinkSystem®
SR675i V3 Server



Enhancing patient care with AI-driven insights

To reduce the manual workload on doctors and enhance medical evaluations with richer insights, AISHA developed an AI model capable of analyzing full-body MRI scans in 30 minutes, 99% faster than manual methods.

“The synergy between the Lenovo and NVIDIA hardware and software is what enables us to get the most out of the GPUs, while maintaining consistency and security.”

DR. JUAN PABLO REYES GONZALEZ
HEAD OF AISHA

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Lenovo Hybrid AI Advantage™ for data science

We build hybrid technology that spans client devices, edge computing, private cloud, and public cloud. This ensures data can be collected, stored, processed, and used to train enterprise AI models — while also enabling real-time inferencing at the edge or on user devices.

Through a broad ecosystem of partners and services, Lenovo delivers secure, energy-efficient, and scalable AI platforms. From workstations used for model development to accelerated compute clusters designed for large-scale training, Lenovo’s validated solutions simplify data science workflows and help teams move quickly from pilot to production with confidence.



Flexible portfolio

Explore a flexible portfolio of hybrid AI platforms and devices from Lenovo ThinkSystem and ThinkAgile infrastructure to Lenovo ThinkPad and ThinkStation® P Series workstations, including partner options to fit your needs.



End-to-end AI services

Lenovo AI Services covers the full application lifecycle, enabling us to meet you wherever you are to rapidly define use cases, deploy solutions, and drive value from your data with AI — from device to data center.



Energy efficiency

Neptune® liquid and air cooling options keep your data center energy efficient with liquid cooling that removes 98% of system heat, reducing power use by 40%.



Right-sized deployments

Tailor your deployments with starter kits (4-24 GPUs) and scale to hybrid AI factories (160+ GPUs).



Why Lenovo for data science?

With Lenovo, your AI-driven data science initiatives are backed by experienced experts, proven solutions, a massive partner ecosystem, and uncompromising reliability and security.



#1
in x86 server **reliability**
for 11 consecutive years¹



30+
years of trusted partnership
with IT leaders to transform
AI vision into value



#1
in x86 server **security**
for 6 consecutive years¹



165+
enterprise AI solutions from
our AI partner ecosystem
with validated use cases



#1
PC provider



50% faster
outcomes achievable with our
AI Library of proven accelerators
and network of AI Innovators²



#1
Microsoft Windows
AI PC provider

Move from data to decisions faster with Lenovo

Transform your AI operations with data science-driven solutions. Contact us to explore how AI can elevate your data insights.

www.lenovo.com/us/en/ai/data-science

Sources

1 ITIC, "ITIC 2024 Global Server Hardware, Server OS Reliability Report," November 2024

2 Lenovo, "Lenovo Hybrid AI Solutions," October 2025

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technology
for all

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