Smarter AI for All

Comprehensive AI Solutions for Higher Education

intel®

Get started with Intel AI in Higher Education

Smarter technology for all

Lenovo

Contents

The future of AI in Higher Education

As Higher Education evolves to meet the demands of a rapidly changing world, AI is emerging as a transformative force, reshaping how educational organizations operate and engage with students and faculty. From personalized learning experiences to enhanced campus safety, AI is creating new applications that increase efficiency, support educators, and improve student outcomes.

Just as the introduction of the Internet and smartphones spawned entirely new ecosystems of applications and transformed the way we learn, AI—particularly generative AI—promises to fundamentally reimagine how organizations deliver education, manage operations, and support learners at every stage of their academic journey.

At Lenovo, we believe in Smarter AI for All, bringing AI to your data using a secure, private, and hybrid approach. Our comprehensive AI products, solutions, as-a-Service models, and a growing partner ecosystem, provide our customers with the greatest set of open choices—where and when they need it most.

Delivering AI with Lenovo and Intel

Lenovo and Intel help you deliver secure AI solutions across the entire education landscape: from enhancing student learning experiences and supporting advanced research to improving administrative efficiency and campus security.

Whether in the classroom, research labs, or remote learning environments, Lenovo technology gives your organization full control, security, and real-time access to data with local and hybrid edge computing solutions. This includes data centers where AI-powered applications and agents require high-performance computing, scalability, availability, and seamless cloud integration.

Through a Hybrid AI approach, Lenovo and Intel bring the right mix of AI models, devices, infrastructure, and expertise to meet the unique needs of educational facilities, ensuring secure, scalable AI adoption across personal, enterprise, and public environments.
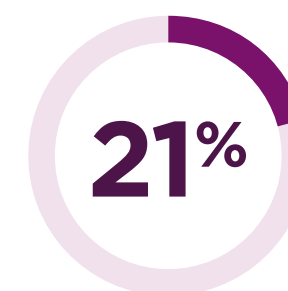
What's already happening with AI?

It's no surprise that education leaders are recognizing the benefits of adopting AI strategies. AI offers transformative opportunities for students, educators, and administrators across various areas, helping organizations personalize learning experiences, protect student privacy, and modernize campus operations.

AI capabilities are increasingly being used to streamline processes, safeguard sensitive student and institutional data, and enable organizations to manage complex compliance regulations like the Family Educational Rights and Privacy Act (FERPA) and the General Data Protection Regulation (GDPR). AI innovation is also enhancing student outcomes by delivering collaborative learning, improving campus safety, and streamlining routine tasks, helping to boost operational efficiency and reduce overhead costs.

Students are **1.5x** **more likely** to fail when learning via traditional lecturing methods alone.[1]

21% of educators stated that they are introducing AI powered chatbots to provide learning support for students.[2]

18% of education organizations are incorporating AI into their curriculum development.[2]

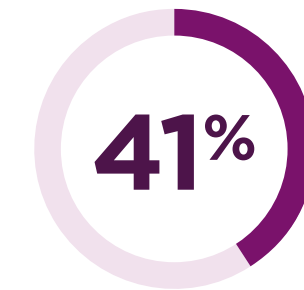# The challenges of implementing AI in Higher Education

For the Higher Education sector, maintaining regulatory compliance across multiple lanes is essential, and adopting AI can present numerous challenges for organizations looking to unlock its full potential.

Cybersecurity is a top concern, as AI expands the potential attack surface, introducing risks such as data breaches and model manipulation that can expose sensitive student and institutional data. The interoperability of data is another hurdle, with organizations generating vast amounts of data from different sources—often leading to complex data silos and underutilization of critical insights.

Many institutions face the paralysis that comes after AI proof-of-concept projects: you know this can enhance learning, safety, and collaboration, but how can you scale and implement these systems responsibly and within budget?

The reality is that implementing AI brings several difficulties for Higher Education, including:

- Knowing where to start

- A lack of strategic approach (AI for the sake of AI)

- The seven Vs of data: volume, veracity, validity, value, velocity, variability, volatility

- Skillset gaps and teaching shortages

- Managing evolving cybersecurity risks

- Compliance challenges and staying up to date with evolving regulations, including:
  – EU AI act
  – Digital Operational Resilience Act (DORA)
  – FERPA or GDPR

- Difficulty integrating simple or complex data from diverse sources, particularly with legacy systems (data silos) and hallucinations

- Ensuring transparency, explainability, and fairness/lack of bias

- Student trust around data privacy and employee resistance

- Lack of access to a secure, private HPC environment

- Underpowered hardware and devices

41%
of senior decision makers in education say their organization is limited by talent challenges. [3]

63%
of education organizations said an AI partner, rather than supplier, was best for successful AI implementation. [1]

Only 33%
of organizations have implemented governance around responsible deployment of AI. [2]

AI grounded in security

In addition to accuracy, explainability, and transparency, security is a cornerstone of AI integration in organizational processes.

This includes adhering to guidelines such as the EU AI Act, as well as ensuring data privacy and information security. Unlike traditional IT systems, AI solutions must be built on a foundation of strong governance and robust security measures to be responsible, ethical, and trustworthy.

Lenovo's security-by-design approach establishes this foundation, ensuring AI solutions are secure from the component level, where the Intel vPro® platform enables advanced hardware protection, and through our Supply Chain Assurance capabilities. Our commitment to AI security is reinforced by our Global Security Organization, the appointment of our Chief Security & Artificial Intelligence Officer (CSAIO), and our participation in initiatives like the Joint Cyber Defense Collaborative.

CSAIO

Responsible

Ethical

Secure

Trusted

Governance

Put the right foundation in place

Lenovo's security by design approach provides the foundation for responsible AI solutions. Lenovo ThinkShield has you covered at every layer, starting with Supply Chain Assurance to protect your devices from the component level up. It also safeguards your devices from threats below the operating system, all the way to keeping data secure between the operating system and the cloud. And with our partnership with Intel, diverse AI workloads are further secured from data center to edge.

This approach includes:

- Lenovo ThinkShield Zero-Trust practices to help secure devices, infrastructure, and networks.

- Hybrid AI that balances on-premises and cloud processing to protect sensitive data.

- Partnerships with leading security vendors to create a robust ecosystem.

- Lenovo owns and controls our manufacturing, so we can build security into every system and component.

- Governance is embedded, driving security across products and services to maintain a vigilant focus on customers' safety.

- Lenovo's experience and expertise allows us to prioritize innovation, continuously earning our customers' trust.
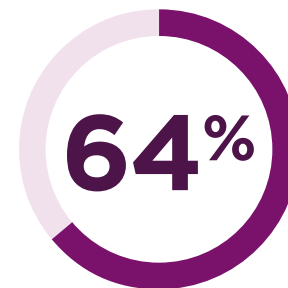
The foundation of responsible AI

To safeguard AI driven applications, AI adoption must be grounded in security. Lenovo's multi-layered approach provides the foundation for responsible, ethical, and secure AI solutions, built upon correct and up-to-date governance.
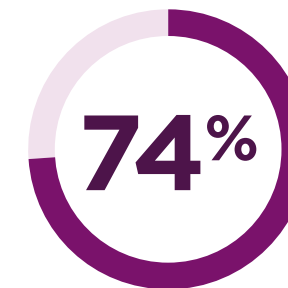
The Lenovo Responsible AI committee covers a wide array of challenges in the AI space. It makes sure AI is legal, ethical, fair, privacy-preserving, secure, and explainable.

The six pillars of Responsible AI at Lenovo are:

1. Diversity & Inclusion
2. Privacy & Security
3. Accountability & Reliability
4. Explainability
5. Transparency
6. Environmental & Social Impact

64%

of US University campuses **are operating in hybrid mode**. [4]

74%

of campus leaders say **hiring IT employees** is a severe challenge. [5]

Higher Education experienced a

15%

increase in cyberattacks

in cyberattacks in Q1 2023. [5]

IT should leverage AI using teamwork

As AI increasingly integrates into the education ecosystem, how we approach IT is evolving.

The widespread adoption of AI requires IT teams to take on more dynamic and proactive roles as digital advisors. Lenovo is a trusted technology partner to over 2,800 educational organizations globally. **With 4 AI Innovation Centers, 18 R&D locations, and an extensive AI partner ecosystem**, Lenovo is uniquely positioned to support Higher Education organizations in AI readiness. From identifying opportunities and use cases to managing data and deploying solutions, Lenovo becomes part of your AI strategy team to create the foundation for organizations of all sizes—no matter where they are on their AI journey.

AI technology: a team approach

Building a scalable, secure, and sustainable AI architecture requires a holistic, team-based approach that involves key stakeholders, including division leaders, infrastructure, operations, software development, and data science.

In an industry where protecting student privacy and safeguarding against plagiarism is paramount, the human touch is still essential. Lenovo has made Responsible AI practices a priority by combining cutting-edge AI solutions with an emphasis on ethical standards and personalized support.

How AI is having an industry-wide impact

Take a deeper look into how AI is already being used in Higher Education, and the many ways Lenovo can help organizations drive industry innovation forward.

Personalized learning:
Personalize educational content to individual students' needs, enhancing their learning experience.

Research capabilities:
Accelerate data analysis, enabling researchers to derive insights from large datasets, quickly.

Administrative automation:
Streamline operations, including admissions, scheduling, and financial aid processes.

Safety and security:
AI-powered campus surveillance and alert systems improve the safety and security of educational environments.

Digital signage:
Enhance communication on campus with by displaying real-time information, event updates, and emergency alerts.

Immersive learning:
Power dynamic, learning experiences using VR and AR to make education more engaging and interactive.

Virtual teaching assistants:
Provide 24/7 support to students, assisting with queries and helping them navigate the learning management system.

Esports programs:
Utilize AI to optimize team performance, game strategies, and player development in emerging esports curriculums.

Student engagement:
Support students' academics and wellbeing, and alert when students are struggling and need intervention.

21% of educators plan to introduce **AI powered chatbots** to provide learning support for students.[2]

16% of education leaders are looking to **integrate AI** into their organization's research and administrative processes.[2]

17% **Using AI to identify and respond** to potential dropouts can improve retention rates by 17% in under 20 days.[6]

Lenovo Solutions for AI in Action

Education organizations are already harnessing the power of Smarter AI for All, here are just a few examples of how Lenovo is helping transform real-world learning and operations.

Pioneering AI-driven university success

"By deploying a Lenovo solution, we've dramatically accelerated the pace of AI innovation at HKMU. We're excited about what the future holds, and we are confident that the AI solutions we develop on the Lenovo platform will help us to enhance the student experience."

Dr. Simon Cheung - Director of Information Technology, Hong Kong Metropolitan University

Solving pressing societal issues

"Supported by Lenovo, we can process and analyze spatiotemporal data faster, get results quicker, and apply exciting new AI and big data technologies to solve real global problems. Behind all the number-crunching. It's about changing the world."

Dr. Raju Vatsavai - Associate Director of Spatial Computing and Technology, NC State University

Finding and preventing threats

"With Kognition, Lenovo, and Qualcomm technology, we get a level of surveillance that would be prohibitively costly if we had to rely on traditional security solutions. What's more, because the Lenovo ThinkEdge platform is so robust and reliable, we know that we can always count on it to help us protect our students and staff."

Gary Krahn - Head of School, La Jolla Country Day School

Advancing ground-breaking research

"Our previous cluster was air-cooled, so moving to Lenovo Neptune™ liquid cooling technology represented a big change. Liquid cooling supports increased levels of performance much more efficiently, which is crucial to meeting both our current and future computing needs."

Scott Yockel - University Research Computing Officer, Harvard University

Lenovo simplifies AI for Higher Education

Lenovo's vision for Smarter AI for All simplifies adoption and brings AI innovation to everyone in collaboration with Intel, through our Hybrid AI model, ensuring AI is delivered seamlessly, responsibly and securely to personal, enterprise and public environments across the Higher Education sector.

We bring AI to your data where and when you need it most, delivering AI solutions at your edges; in classrooms, research facilities, student labs, and remote learning environments—wherever your organization needs full control, security, and real-time access to data. We also deliver AI solutions at your data centers, providing high performance power, availability, scalability, and seamless cloud integration.

Through our Hybrid AI approach, we bring the right size and mix of AI models, devices, infrastructure, operations, and expertise to your data across personal, enterprise and public environments.

In line with the unique demands of Higher Education, Lenovo brings a hybrid approach, which can blend on-premises and cloud-based processing. Together, Lenovo and Intel jointly enable a broad portfolio for hybrid AI, data center, cloud, edge, and PC. With Lenovo supporting your AI adoption, organizations can foster academic innovation and creativity, enhance the student experience and streamline administrative processes.

Our Hybrid AI model brings innovation to everyone

Personal

Lenovo puts AI in your hands, enabling you with the most personal tech ever to give you the personal power you need. AI-powered solutions on smart devices like AI PCs predict user needs based on behavior, while keeping data private unless shared with the cloud. We call this. **AI for You.**

With Lenovo and Intel, AI is:

- **Personalized**: Harness AI capabilities to rapidly analyze student data for personalized learning experiences and improve administrative workflows.

- **Productive**: Transform the learning environment with AI automation, streamlining mundane tasks and accelerating time to insight for intelligent decision-making.

- **Protected**: Strengthen your digital defenses with advanced, predictive security measures, robust threat detection, and cyber-resiliency, safeguarding a secure and efficient digital environment for student data and sensitive information.

Enterprise

Securely and privately develop, fine-tune, deploy and scale AI solutions (AI apps, agents, tools, models) on-premises, using enterprise data, policies, and governance compliance such as FERPA and GDPR, across multiple devices.

- **Innovate:** Accelerate innovation with the industry's leading AI portfolio, delivering rapid insights and optimized learning experiences.

- **Transform:** Transform your life and work with enhanced innovation and productivity through scalable and smart AI solutions, infrastructure, services, and support.

- **Responsible:** Apply Responsible AI principles to your AI adoption ensuring the integration of secure, ethical and sustainable AI solutions.

Public

Leverage cloud AI with personal assistants, chatbots, and open-source frameworks, enhancing innovation, and improving operational efficiency across educational organizations.

- **Custom build, design and delivery**: Develop AI solutions tailored to your needs, boost academic performance, maintain compliance, and help reduce costs for long-term growth and competitive advantage.

- **Safeguard technology excellence**: Make sure your AI systems are robust, reliable, and perform consistently to minimize downtime, reduce errors, and build student and faculty trust.

- **Deliver exceptional learning experiences**: Better-designed, more intuitive AI solutions lead to enhanced user experiences, adoption rates, and greater satisfaction.

The Lenovo AI portfolio

Building a scalable and sustainable AI architecture

Building an AI architecture begins with a technology partner like Lenovo that can bridge cross-industry best practices for compliance, security, and data management while providing devices and infrastructure to meet the unique needs of students, educators and administrators.

Instant AI-driven productivity

Lenovo AI PCs, Workstations, and Edge devices include Intel processors and the new Intel AI-accelerating NPU (Neural Processing Unit) to enhance employee productivity and drive real-time decision-making across every touchpoint. From classrooms to administrative offices, Lenovo Edge AI servers, devices, and ISV-based solutions transform operations across your entire education ecosystem.

90% of education organizations **already engaged with an external AI partner** were satisfied when doing so.[3]

ThinkStation PX

Lenovo ThinkStation P Series
Powered by Intel® Xeon® Scalable processors

High-performance workstations which are powerful, ISV-certified, energy-efficient and highly versatile. Ideal for AI applications in analytics.

ThinkPad X1 2-in-1

Lenovo ThinkPad X1 2-in-1
Powered by Intel® Core™ Ultra processors

The ThinkPad X1 2-in-1 Gen 10 Aura Edition combines the versatility of a laptop and a tablet, with AI-driven features that adapt to user preferences and improve efficiency.

ThinkPad X1 Carbon

Lenovo ThinkPad X1 Carbon
Powered by Intel® Core™ Ultra processors

The ThinkPad X1 Carbon integrates AI-driven features like Microsoft Copilot, allowing users to automate tasks and enhance productivity effortlessly.

Lenovo ThinkEdge
Powered by Intel® Xeon® Platinum processors

Purpose-built platforms for compute-intensive applications deployed outside traditional data centers, with the flexibility needed for real-time data processing.

ThinkEdge SE450

Lenovo ThinkSystem
Powered by Intel® Xeon® Scalable processors

High-performance servers optimized for deploying and training AI models, handling large datasets, and complex algorithms.

ThinkSystem SR670

Lenovo ThinkAgile
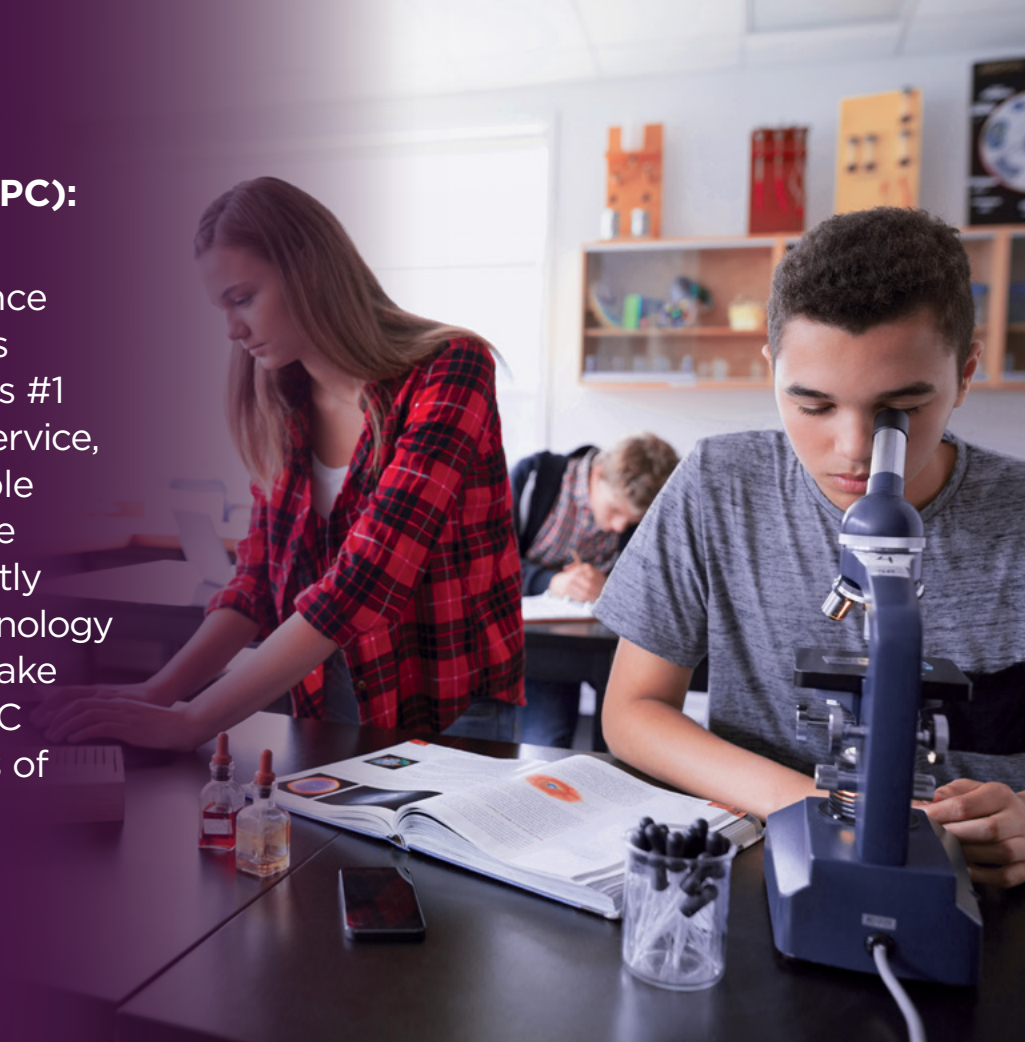**Powered by Intel® Xeon® Scalable processors**

Integrated systems offering pre-configured servers, storage, and networking to streamline AI adoption and deployment.

ThinkAgile HX650

Lenovo High-Performance Computing (HPC):

Supercomputers are increasingly vital in education to process large datasets, advance research and enable real-time data analysis for academic insights. Lenovo is the world's #1 supercomputing provider. [7] Available as a Service, TruScale for HPC combines Lenovo's reliable technology with fully managed, predictable billing and flexible scaling to meet constantly changing needs. With industry-leading technology and global HPC architects and experts, we take a customer-centric approach to deliver HPC solutions that best meet the evolving needs of Higher Education.

Neptune™ Liquid Cooling

AI technology requires more system power than ever, putting an increased strain on energy demands. Lenovo's Neptune™ Liquid Cooling enables performance without compromise, reducing energy consumption by up to 40% while providing maximum performance and reliability of critical AI systems, ensuring that these systems can operate optimally without overheating or downtime.

The pace of change

Lenovo is passionate about responsible AI practices, offering end-to-end protection and support for your hybrid AI stack.

Our Responsible AI Committee, AI Innovators Program, and flexible Everything-as-a-Service solutions are protected, compliant, and offer a validated ecosystem with the needed expertise and partner solutions.

AI Center of Excellence

The Lenovo AI Center of Excellence (AI CoE) is designed to help customers put AI to work for their organizations quickly, cost-effectively and at scale, with solutions that bring AI from ideation to reality. Lenovo makes AI adoption easier for you by providing workshops, proof of concepts, benchmarking, and performance optimization. Together, with our global partner ecosystem, we help reduce time to value and risk. Lenovo has strategically positioned AI data scientists, solution architects, engineers, and industry consortiums worldwide.

Lenovo AI Innovators program

Lenovo has a comprehensive partner strategy that brings together best-in-class Independent Software Vendors (ISVs) for AI software, hardware, and solutions. We have over 50 AI Innovators in the program, providing more than 165 solutions.

In the AI Innovator program, we provide access to our AI Discover Labs and a collaborative platform where partners can develop, deploy and validate their AI solutions with the support of cutting-edge tools, resources and expertise.

- Find specific enterprise AI solutions for Higher Education

- Execute proof of concept and comply with Lenovo's Responsible AI guidelines

- Train your own data without risking confidentiality

Services powered by AI

Lenovo AI Fast Start: Helps you quickly prove the value of Personal, Enterprise, and Public AI platforms. It provides access to AI assets, experts, and partners to rapidly build a GenAI solution tailored to your institution, ensuring relevance and speeding up large-scale deployment.

Lenovo TruScale Device as a Service (DaaS): Provides comprehensive, scalable Smarter AI devices and frees up valuable IT resources with a predictable subscription-based model—all from a single trusted partner. TruScale DaaS allows for quicker upgrades without upfront costs so Higher Education organizations can future-proof their technology investments and remain competitive.

Lenovo TruScale Infrastructure as a Service (IaaS): Unlock the advantages of on-premises infrastructure with the flexibility of a cloud-like experience. Lenovo offers tailored solutions for hybrid and multi-cloud environments, infinite storage, and high-performance computing (HPC).

Our new TruScale GPU as a Service boosts HPC with advanced workload orchestration and usage metering, optimizing AI GPU resources for maximum productivity and availability. Combined with Asset Recovery Services, assets can be securely recycled, reused, or repurposed in an environmentally friendly way to maximize value. In an era of rapid advancements in AI and GenAI hardware and software stacks, this flexibility is crucial. Lenovo provides clients with the broadest range of deployment options.

Delivering intelligent sustainability

We understand that what's better for people is also better for your institution, which is what drives every decision and investment we make.

Lenovo sustainability services include robust offerings to help Higher Education organizations achieve their sustainability goals. Lenovo Asset Recovery Service (ARS) helps extend device ROI with premium warranty, support offerings, and hassle-free disposal. Our innovative Neptune™ Liquid Cooling technology reduces energy consumption by up to 40% supporting eco-friendly data centers while addressing the growing concern of AI powered consumption. Lenovo CO_2 Offset Services allows our customers to offset their device's carbon footprint.

We also go further with the Lenovo Intelligent Supply Sustainability Analytics (LISSA) tool, which enables transparent monitoring of supply chain sustainability. All GenAI solutions enabled by Lenovo undergo a responsible AI review including advising customers on how to setup their own responsible AI review and stay compliant.

Top 10

Lenovo's ranking in the 2024 Gartner Supply Chain Top 25. [8]

Since 2017, Lenovo has invested more than

$1.7 billion

into AI. [8]

Get started with AI for All

Embarking on your AI journey begins with a thorough assessment of your current capabilities. You'll need to identify what your priorities are and focus on the quick wins that improve learning outcomes and student engagement and rapidly move beyond proof-of-concept to tackle the main challenges head-on.

Lenovo can support your AI initiatives at every stage of your journey. Once we understand your unique requirements, we define your desired outcomes, evaluate your data readiness, implement critical milestones, and pilot a use case to demonstrate proof of value and help your organization be set up for success. Lenovo provides your organization with the tools, knowledge, and expert guidance required for robust and reliable AI adoption.

Our AI Professional Services cover five critical phases: AI Discover, where we identify how AI can create value for your organization; AI Advisory, which assesses your AI readiness and defines strategic plans and roadmaps; AI Fast-Start, focused on designing and building AI elements; AI Deploy & Scale, implementing secure, scalable, and tailored Hybrid AI solutions; and AI Managed, which promotes continuous optimization.

Visit **www.lenovo.com/higher-education**

Why Lenovo?

Trust Lenovo to empower your institution with intelligent technology, driving innovation and growth in a secure and scalable way.

Embrace AI and redefine the future of your organization with intelligent solutions designed to help you drive innovation and enhance learning experiences. From devices and edge computing to infrastructure, servers, storage, and services, Lenovo delivers a complete, sustainable, and secure solution tailored to your needs.

Get a trusted partner. Discover Smarter AI for All and Smarter Education for All.

Contact your Lenovo representative today.

Get started with Intel AI in Higher Education

1. PNAS, Active Learning research paper, 2014
2. PwC, Education Leader Survey, 2023
3. Faculty, Breaking down the barriers to AI adoption, 2022
4. The Chronicle of Higher Education, 2023
5. PwC, Education Leaders Survey, 2023
6. Deloitte, 2024 Higher Education Trends, 2024
7. TOP500.org
8. Gartner, "Supply Chain Top 25 for 2024," 2024

Smarter technology for all