SHI | DELL Technologies TITANIUM BLACK PARTNER

Is AI the future of higher ed?

SHI and Dell's exclusive survey shows the surprising truth

Education leaders offer key insights into AI preparedness.

New tools for fresh perspectives

Students in higher education aren't the only ones on campus who need advisors. It turns out their professors and your staff might require a little guidance, too—but not from anyone with an office. For colleges and universities everywhere, artificial intelligence has the potential to put the "A" and the "I" in "advisor." You can imagine it as the knowledgeable guide who not only helps institutions level up their processes but also optimizes the way that future leaders are crafted.

However, there's one particular way your automated advisor can be most like your college one: It has a way of asking the right questions. Luckily, SHI is good at asking questions too, ones that can help propel your AI initiatives forward.

In May 2024, SHI and Dell collaborated with the Center for Digital Education, conducting a survey that gauged institutions' readiness for the AI revolution. The findings underscore the transformative impact of having AI as an ally, and also raise serious questions about how it can integrate into the classroom, be used ethically, or personalized learning.

Perhaps unsurprisingly, these large questions may have tough answers. Many institutions find themselves at square one, trying to figure out how to make that crucial first move; others have already started their journey, but have yet to implement any data security or privacy practices. In either situation, it can't hurt to have a trusted counselor. With SHI and AI, you've got two.

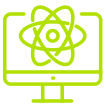
For context and help with your AI implementation, join us as we dig into the data.

CONTENTS

What kind of AI are we talking about exactly?

According to Confucius - a pretty prominent advisor - "The beginning of wisdom is to call things by their proper name." In that spirit, let's first define AI and its subsets.

Broadly, AI is the science and engineering of making intelligent machines, meaning the technology that allows machines to exercise autonomy in determining how to respond to inputs. This is different than the computational machines that we are more familiar with, where we provide instructions and conditions in procedural code that can lead to an automatic response. To put it shortly, in AI, the machines have agency, containing layers within layers within layers:



MACHINE LEARNING (ML)

This category is where much of the recent attention has been directed. It focuses on the development of algorithms that can learn and make predictions or decisions based on data. Its functions span the following categories:

Supervised learning
Where humans provide labeled data to the model, and the model learns to map input data to the correct output.

Unsupervised learning
Where unlabeled input data is provided to the model, and it identifies patterns and relationships in the data.

Reinforcement learning
Where humans "teach" the model through trial and error to make decisions.

Deep learning (DL)
Where many layers of neural networks are used to analyze input data to compose the best means of accurately providing the best output. This too is where much recent attention has been paid, and contains numerous subcategories, including:

- Convolutional neural networks (CNN) for image recognition tasks.
- Recurrent neural networks (RNN) for recognizing data sequences.
- Generative adversarial networks (GAN) where two networks work together to produce new data (like deep fakes).
- Foundational models (FM), which are general-purpose models trained on vast amounts of data and have the capacity to learn broad-ranging features and patterns (like ChatGPT).

EXPERT SYSTEMS

Engineers can use this to obtain feedback on design modifications, code compliance, and other complex elements of building plans. Your Amazon cart recommendations are one such example.

NATURAL LANGUAGE PROCESSING (NLP)

Systems like Siri or newer interactive voice response (IVR) systems can use voice prompts to properly direct and in some cases handle customer calls.

COMPUTER VISION

This is a distinct field that shares similar techniques to machine learning, its purpose being to interpret and understand the visual world.

Today, when people discuss AI, they're often talking about FMs.

That said, the survey conducted here did not attempt to describe AI. Instead, we wanted our respondents to provide their perspective on AI and show us where they were.

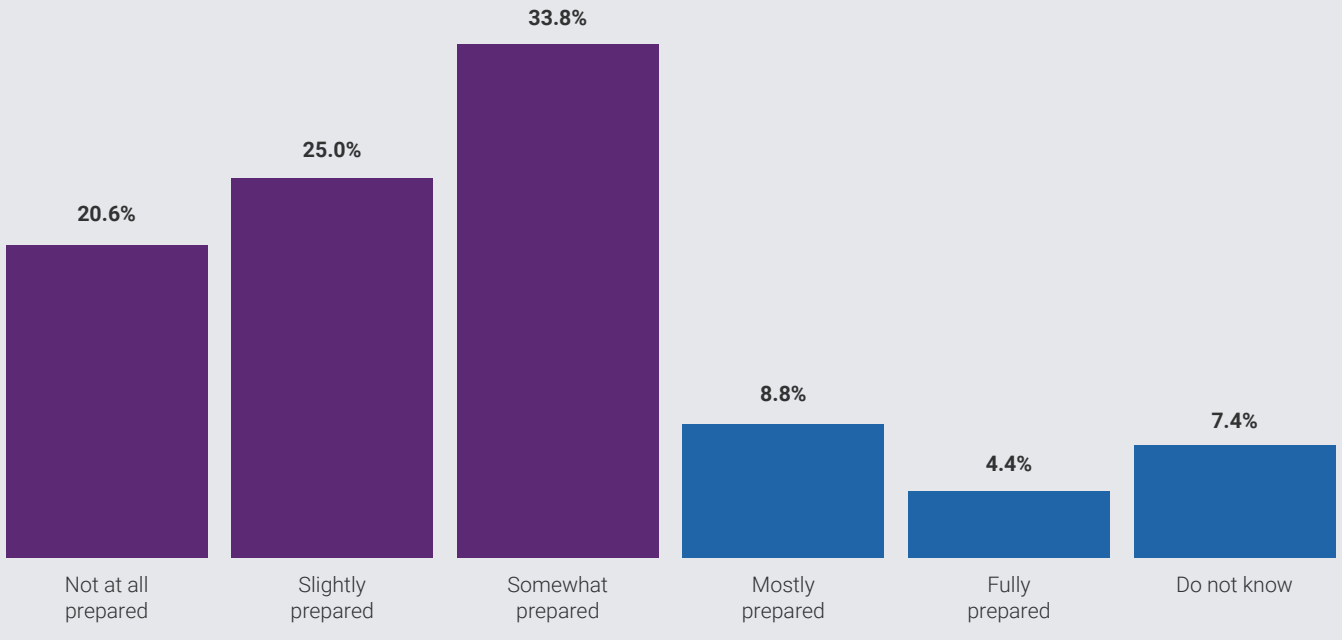
AI strategy and use cases in higher education

According to the survey results, around 50% of research institutions have a specific strategy for deploying and managing AI technologies, indicating a proactive approach towards AI adoption.

However, almost 60% of respondents say they are only slightly or somewhat prepared. These institutions are looking for measurable benefits from targeted solutions before taking the leap. Fortunately, services such as SHI's AI use case workshops are designed to help these institutions create a clear, cohesive, and actionable AI roadmap before getting started.

These sessions provide an opportunity for detailed discussions to uncover key AI opportunities, making it easier to select initiatives that align with the institution's objectives. This ensures that the adoption of AI is not just a tick-box exercise but a thoughtful, strategic decision that yields positive results.

How prepared is your institution to harness the potential of artificial intelligence (AI)?

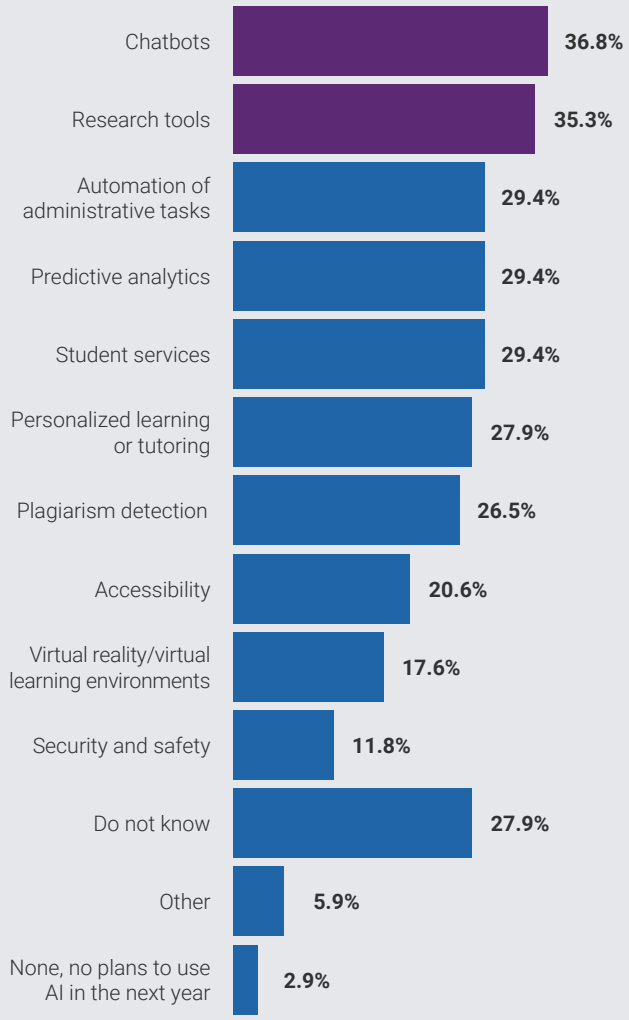


Uncovering AI use cases: From concept to reality

The breadth of AI's applications is vast, with chatbots and research tools topping the usage charts. Automating administrative tasks is another area where AI's potential is being realized. By outsourcing these duties to AI, institutions can free up valuable resources to focus on more strategic initiatives, thus enabling them to redirect their efforts toward more mission-driven activities.

"This is the future of higher education," says SHI Higher Education strategist Tim Hilbie, "and it lies in personalization through AI. We're seeing a focus on AI-driven tutoring and learning platforms that cater to the individual needs and pace of students." Similarly, AI-powered research tools are augmenting the capabilities of scholars, enabling them to perform complex data analyses and generate insights at an unprecedented scale and speed. Researchers at colleges and universities worldwide are unlocking new discoveries with cost-effective and scalable high-performance computing (HPC) solutions from Dell Technologies. These are not only safe but also competitively crucial, as increased processing speeds can provide an edge for researchers, students, and faculty alike. "High-performance computing and artificial intelligence continue to pave the way in research, bringing us closer to new discoveries, solutions, and breakthroughs," said Thierry Pellegrino, vice president of HPC at Dell Technologies.

Where does your institution currently use AI or plan to use AI within the next 12 months? Select all that apply.



While there's so much potential in the application of these technologies, there's currently so little preparedness. However, the first step has to start somewhere. According to Dell's Field Chief Technology Officer and Principal Engineer, Adam Robyak, the best thing institutions can do is "hop on board [the speeding AI train] and figure out how to use it to best reach your destination or goal."

More than anything, the disparity in AI readiness across the higher education landscape highlights the need for a tailored approach. Every institution is unique, and so too should be the strategy to harness AI effectively. To this end, SHI actively assists institutions in identifying and implementing bespoke AI solutions that are in sync with their strategic vision and operational requirements. Whether it's improving student engagement, facilitating cutting-edge research, or optimizing administrative workflows, SHI's expertise ensures that AI investments are impactful, sustainable, and aligned with institutional goals.

Data cleanup and infrastructure for AI

IT infrastructure teams in higher education need to ask themselves two key questions: Which tools are most likely to be used? And how?

Without this information, they will not be able to ensure that adequate engineering exists to support AI initiatives. For example, AI will always require input data. If the AI initiatives are in the cloud but the data needed is stored in on-premises data centers, how will the IT infrastructure team handle it? If it's through on-premises infrastructure (due to the required use of the latest GPUs), do the current server platforms have the ability to support high-density GPU installation, or will they need to purchase purpose-built AI servers?

For now, these are still questions best answered by higher education's impressive IT teams and not by AI itself.

Are your storage solutions ready for AI?

With a growing reliance on data to inform decision-making, optimize efforts, and power AI, public sector organizations must be more mindful of how their data is used, stored, and accessed.

Through SHI's **Storage Lifecycle Success Plan**, our experts provide you with ongoing consultative and analytical support, maximizing your storage performance and related technology capabilities.

Take part in a six-step process that focuses on continual evaluation, planning, optimization, and assessment. This aligns storage with changing unstructured data and allows you to further adopt AI in a secure and safe way.

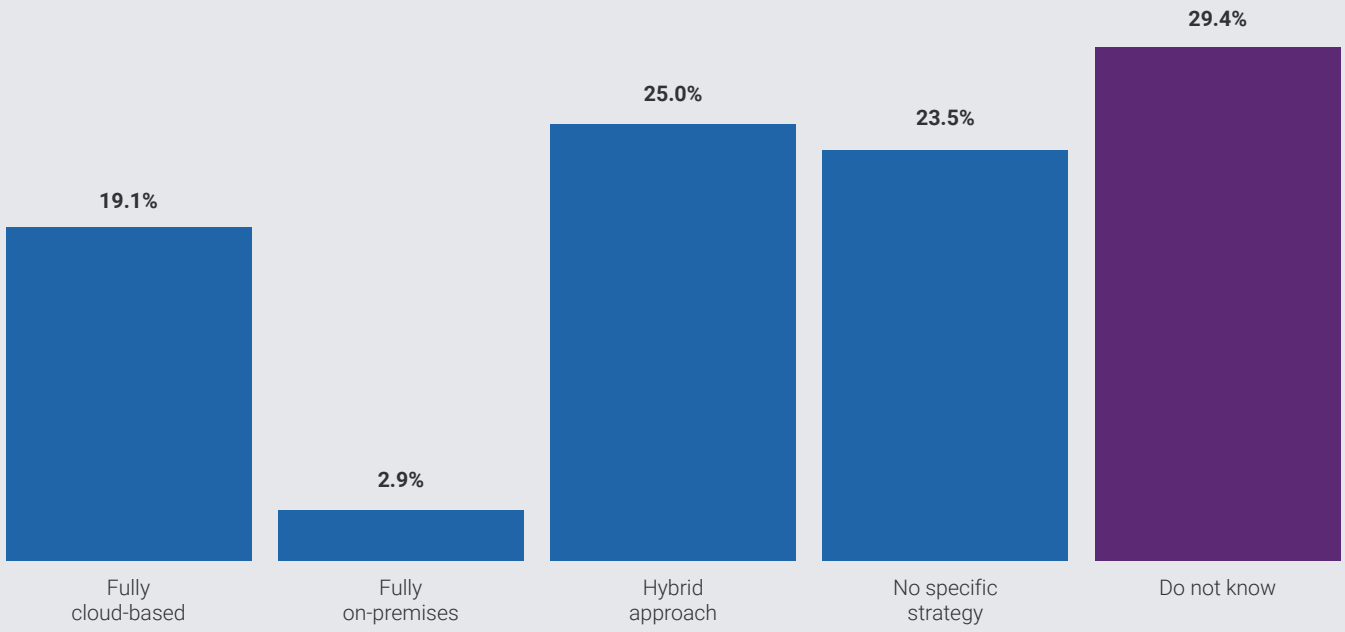
Learn more

Comprehensive data readiness assessment

The survey results draw particular attention to the issue of AI preparation, revealing that a mere 13% of institutions say that they are "mostly prepared" or better to utilize AI. Over 20% of respondents even go so far as to say they aren't ready at all to grapple with these technologies. According to SHI Public Sector Field Solutions Engineer Steve Troxel, this should be alarming for CIOs and CISOs, who "need to create a method for capturing AI interests across the institution, so they can build a strategy to suit them. The policies and governance for security and privacy can be built with these use cases and strategies in mind."

Luckily, these are areas where SHI can deliver significant value.

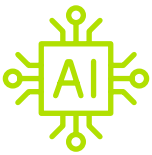
What is your institution's strategy for deploying and managing AI technologies?



Infrastructure readiness: The pathway to AI excellence

Infrastructure readiness is another critical dimension of implementation, with only 16% of institutions confirming their infrastructure is ready for extensive AI integration for students. Troxel adds, "The pace of AI adoption in the line of business within higher education can be seen in the responses regarding data security and privacy policies. Usually, the CIO and CISO are keenly aware of the importance of establishing effective policies to govern data security and privacy due to the damage to their institutions that can come from a data security or privacy breach."

What's more, over 80% of respondents didn't feel that these policies were fully implemented, and 70% of respondents were either already using AI or planning to use AI within the next 12 months. This data should be a wake-up call to higher education boards of trustees and all senior leadership. A data-related incident due to the use of AI could not only put enrollments at risk; it could undermine research funding and, most importantly, compromise student safety.



16% of institutions confirmed their infrastructure is ready for extensive AI integration for students.

80% of respondents didn't feel that effective AI usage policies were fully implemented.

70% of respondents were either already using AI or planning to use AI within the next 12 months.

According to SHI Public Sector Field Solutions Engineer Tim Kazsuk, "It is crucial to establish policies and guardrails when integrating AI. Key considerations include understanding the types of data AI is being merged with, the current state of that data, and whether any data clean-up needs to be done before AI integration. It's also important to ask yourself whether the AI is confined within your organization or if it has access to external networks." These questions, though important, may not have a one-size-fits-all answer as they can vary between customers. Therefore, it's vital for those in higher education to thoroughly evaluate these factors before implementing AI solutions.

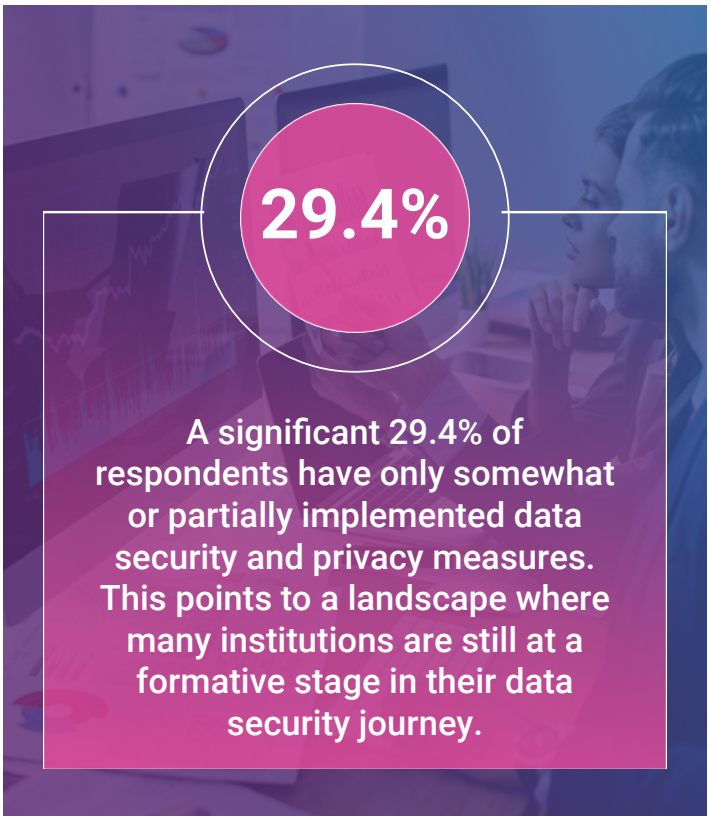
It's no secret that higher education institutions often operate their equipment for extended periods, usually due to budget restrictions. As such, evaluating their existing infrastructure is crucial when they are considering AI integration. Once more, key questions arise, such as whether the current setup can handle the additional load from AI or if running AI on older hardware could pose security risks. These are all significant areas of concern, but SHI is here to help you navigate them. We provide state-of-the-art cloud computing solutions that are scalable, secure, and optimized for AI applications.

With SHI, institutions can be assured of an infrastructure that is not only AI-ready but also resilient and future-proof.

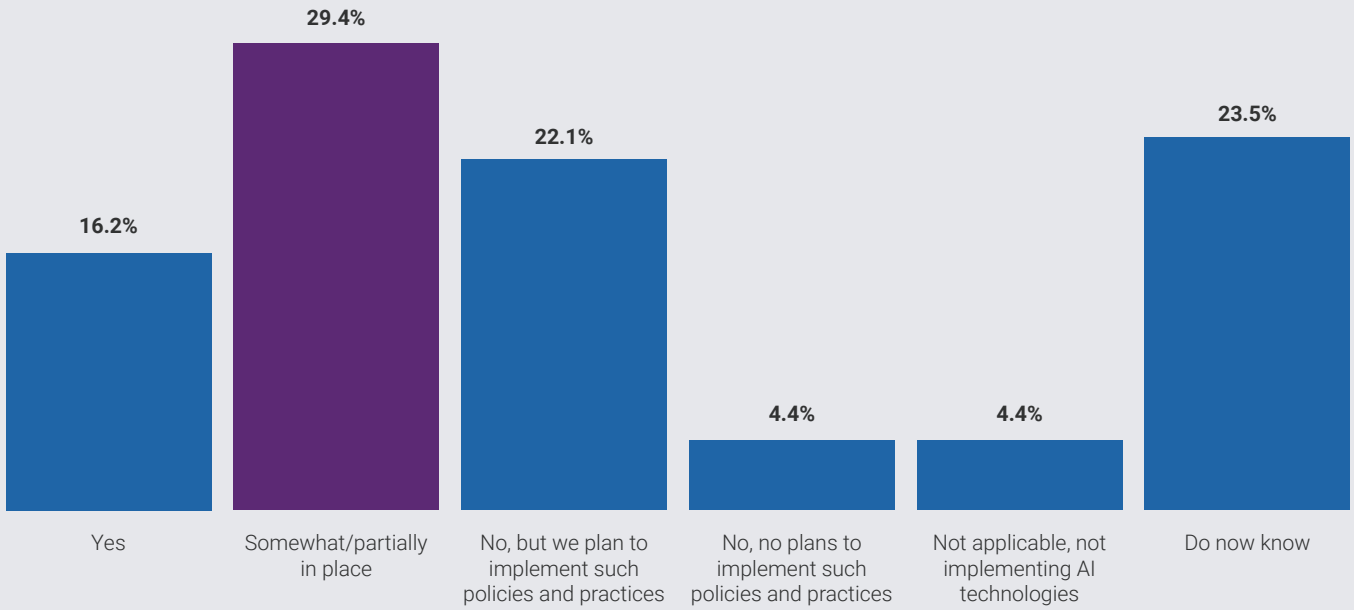
Ensuring data security and privacy in AI deployments

With the integration of AI, data security and privacy considerations have moved to the forefront of strategic planning for higher education institutions. A significant 29.4% of respondents have only somewhat or partially implemented data security and privacy measures. This points to a landscape where many institutions are still at a formative stage in their data security journey.

But as AI systems handle increasingly sensitive data, existing privacy policies must also be reevaluated and strengthened. SHI's regulatory compliance and privacy services ensure that institutions are not only aligned with current privacy laws but are also prepared for future regulations. Our services help institutions implement privacy-by-design principles in their AI systems, ensuring that privacy is not an afterthought but a foundational component of all AI initiatives. We enable institutions to instill trust and confidence among their stakeholders, ensuring that their AI deployments are both secure and ethical.



Does your institution have policies and practices in place to ensure data security and privacy when implementing AI technologies?



Training for AI: Bridging the knowledge gap

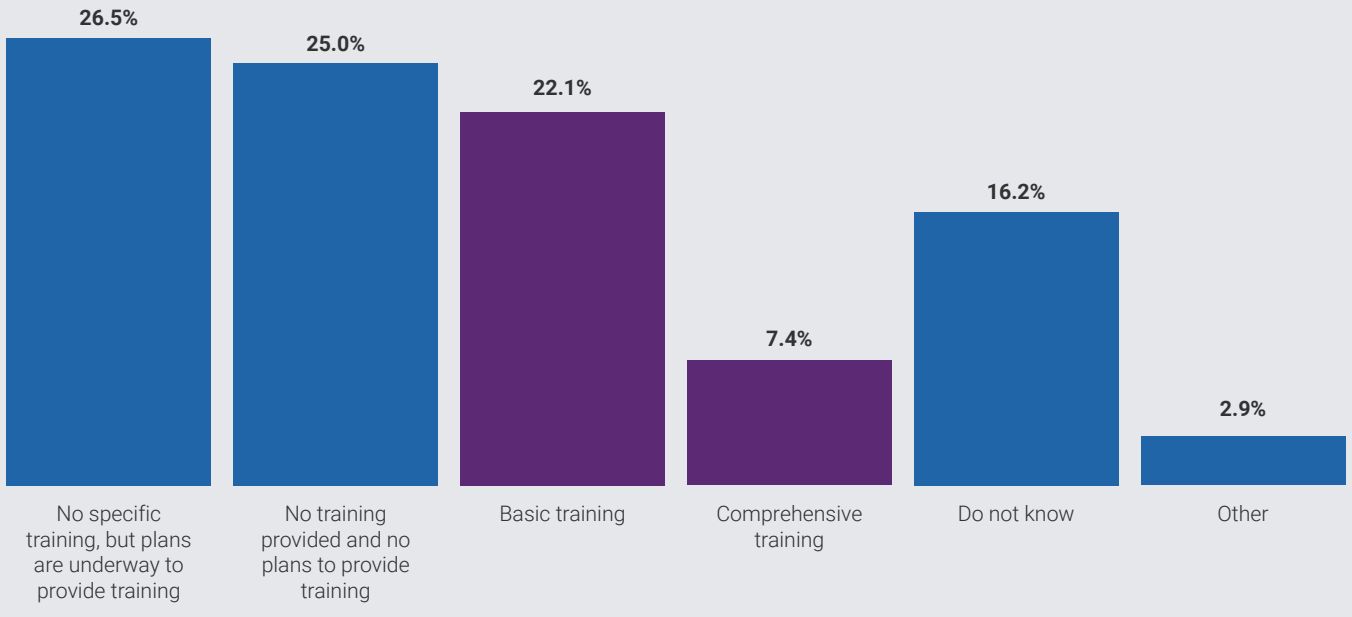
The survey data reveals that a significant gap exists in AI training and development, with only a small fraction of institutions offering comprehensive AI training programs. According to SHI Higher Education Strategist Adam Morris, "Many institutions are uncertain about the starting point. As students, faculty, and staff gain deeper knowledge about generative AI, other AI applications remain less well-known. These institutions are also looking to automate more tasks and are turning to AI for help in these areas. Therefore, numerous vendors are leveraging AI to enhance efficiencies in operating systems and research within higher education institutions."

> "Comprehensive training isn't just a value-add; it's a strategic imperative for institutions looking to remain competitive and relevant."
>
> Tim Hilbie , SHI Higher Education strategist

The survey underscores the importance of cultivating a workforce that is proficient in AI. SHI's educational initiatives focus on developing core competencies in AI among the staff, fostering a culture of continuous learning and adaptation. By enhancing the AI skill sets of the workforce, institutions can ensure that their staff are not just participants in the AI revolution but active contributors to it. According to Hilbie, "Comprehensive training isn't just a value-add; it's a strategic imperative for institutions looking to remain competitive and relevant."

The absence of AI training represents both a challenge and an opportunity. That's why SHI is eager to work with institutions to turn this around, ensuring that their staff are not just prepared but confident in their AI capabilities. Our training programs cover a wide spectrum, from introductory sessions on AI basics to advanced workshops on machine learning and data analytics. Our goal is to build AI fluency across all levels of the institution, enabling staff to contribute meaningfully to AI projects and initiatives.

What kind of training is provided to equip your organization's staff with the skills and knowledge to utilize AI technologies?



Funding AI initiatives

Funding is critical for AI initiatives in higher education. Predictably, survey participants noted the lack of it as a primary concern, alongside competing priorities.

The data suggests a strategic mix of regular budget funding and free resources as the mainstay for supporting AI projects. However, grants, representing a significant 14.7% of the funding sources, provide an untapped opportunity for institutions—a domain where SHI can play a transformative role.

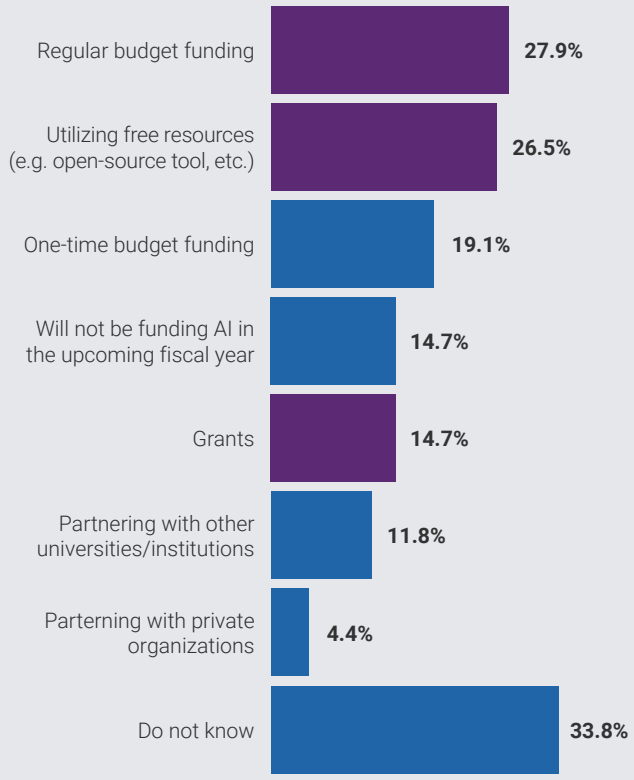
SHI's grant support program demystifies the complex landscape of funding opportunities. We assist institutions in:

- Identifying suitable grants.
- Navigating the application process.
- Ensuring that the AI initiatives are adequately financed.

This program is not just about securing funds—it's about aligning financial resources with the institution's strategic vision for AI, thereby maximizing the investment impact. As SHI's Director of Funding and Community Strategy, Linda Heiss, points out, "Educational technologies such as AI are often grant-funded as part of a larger project. However, grants such as the Educational Technology, Media, and Materials for Individuals with Disabilities Program fund projects specifically addressing the use of AI to meet the needs of students."

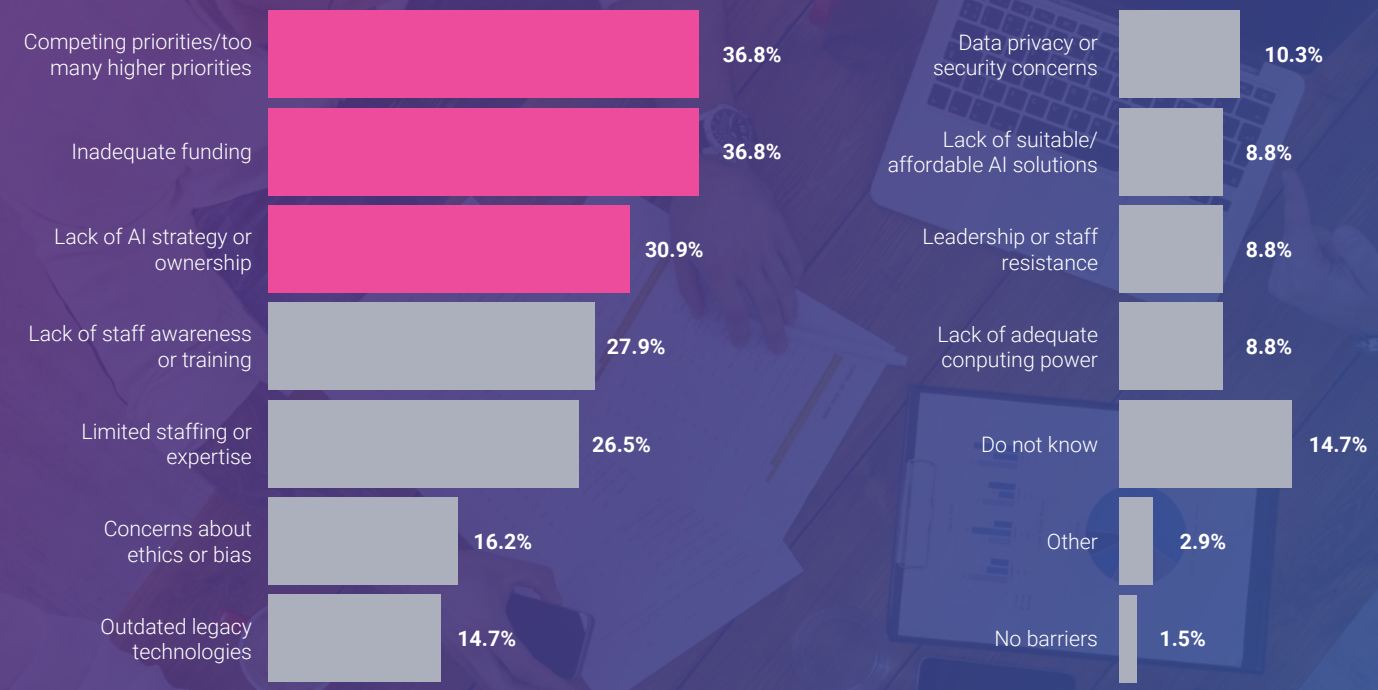
One of the most striking findings from the survey is that nearly half of the respondents require assistance in developing an AI funding strategy and gaining awareness of available grants. This is a clarion call for strategic financial planning and support services—services that SHI is well-positioned and ready to provide.

How is your institution funding AI initiatives for this upcoming fiscal year? Select all that apply.

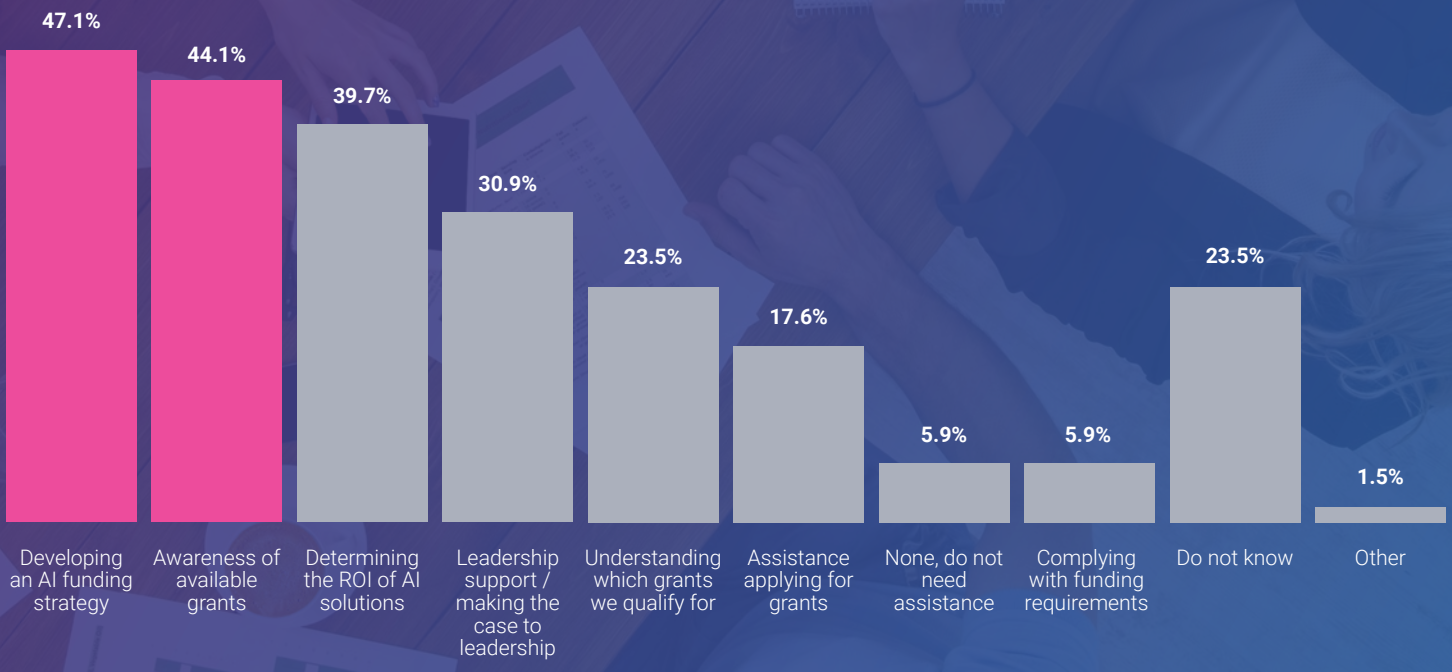


Funding AI initiatives in higher education

What are your institution's current biggest barriers to implementing AI technology? Select up to 3.



Where does your institution need the most assistance in securing funding for future AI infrastructure initiatives? Select up to 5.



SHI and Dell's commitment to empowering higher education through AI

Any good academic advisor goes above and beyond. Beyond traditional roles, beyond expectation, pushing you to go beyond your imagination.

As it guides your institutions through innovation, AI helps identify growth opportunities and answer questions you don't even know to ask. As for the ones on the mind right now, we are here to answer those, and help your institution:

- **Personalize learning experiences**
- **Automate administrative tasks**
- **Advance research capabilities**
- **Optimize institutional operations**
- **Improve data security and privacy**

SHI equips you with the necessary tools and support to maximize the impact of your AI initiatives. Our commitment to your journey promises to revolutionize higher education, ensuring institutions not only adapt to but also lead in the era of AI. Prepare for a future of continuous innovation. Reach out to our AI experts today to get started.

Ready to build a data storage strategy for AI?

Learn about grants for your AI initiatives

Think of SHI as *your personal technology concierge*. We connect your team with the IT solutions and services you need to support your organizational growth and employee experience.

Whether you're building a modern hybrid workplace, defending against an evolving threat landscape, making the cloud work harder for you, or searching for ways to optimize your software portfolio, our friendly 6,000-person team is ready to solve what's next for your organization.

Our in-house data center integration, device configuration, and deployment and license advisory services, plus our top-tier status with vendors and flexible financing make life simpler for IT decision makers.

Execute your IT vision with stress-free, scalable solutions you – ***and your people*** – will love.

SHI is proud to be the largest Minority/Woman Owned Business Enterprise (MWBE) in the United States.

Tailored IT services for *maximum value*

Maximize your technology investments with our premier IT services. SHI's expert teams help you with strategic technology selection, seamless deployment, and ongoing management, all designed for your unique business needs.

Managed services
Optimize costs and workloads with our cloud-managed services.

Training and adoption
Drive technology adoption and propel your organization forward.

Integration services
Build and integrate end-to-end IT infrastructure at scale.

Customer Innovation Center
Make evidence-based decisions with expert support from SHI Labs.

Leasing and financing
Accelerate your digital transformation with flexible financing services.

SHI at a *glance*

WBENC Women's Business Enterprise National Council

NMSDC National Minority Supplier Development Council

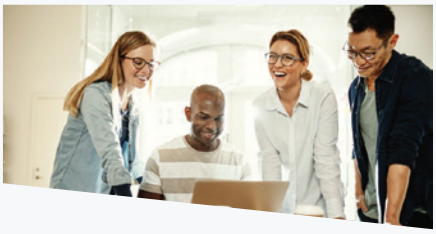
Silver 2023 ecovadis Sustainability Rating

The Channel Co. CRN MSP 500 2024

The Channel Co. CRN Solution Provider 500 2023

Making connections
We connect your team with the scalable IT solutions and services you need to securely support your organizational growth and employee experience.

Beyond the contract
We have contracts and SLAs with our customers, of course. But we also emphasize going the extra mile to deliver exceptional value and ensure true success for your organization.



Sweating the small stuff
We help you focus on what's most important by handling distractions. From managing long-tail vendors to arranging logistics to managing IT assets, we've got your back.

Friendly, knowledgeable, and well-connected — *we're ready when you are*.