

Where should colleges and universities deploy artificial intelligence?

A guide to potential applications and how to get started

At colleges, universities, and research institutions — where challenges are complex and resources are limited — the possibilities for artificial intelligence (AI) at the institutional and individual levels are vast.

AI can help empower faculty, staff, researchers, and students to achieve more and assist institutions with delivering their missions more efficiently and effectively, particularly in the face of resource scarcity and uncertainty.

But where to begin? As with any technology implementation, careful consideration should be given to parts of campus where AI can drive the most efficiency in support of the core mission. Evaluate how AI can be integrated into operations that support research, academics, and community impact.

The following are seven potential focus areas and initial steps for implementing AI solutions in higher education and research.

In Brief

- From enhancing recruitment to streamlining research compliance, artificial intelligence (AI) offers endless possibilities for higher education and research institutions.
- When choosing where to apply AI, institutions should carefully consider areas where it can have the most significant impact — including operational efficiency and cost-savings, improved decision making, enhanced student support, and more effective resource management.
- Critical initial implementation steps include establishing guiding principles, selecting highly repetitive or data-intensive tasks, and empowering employees.
- A guide for implementing AI solutions in multiple areas, including recruitment marketing, admissions, student success, operations, advancement and fundraising, and research operations and compliance, is provided.

Potential focus areas



Admissions

By automating administrative tasks and helping admissions teams review large application volumes quickly, AI is paving the way for a more equitable and efficient selection process.

Sample challenges

- Managing and reviewing thousands of applications within short timelines
- Ensuring decisions are objective and free from unconscious bias

How AI can help

- **Automated application review systems:** Streamline candidate screening using predefined criteria, such as GPA or coursework rigor.
- **Natural Language Processing (NLP) tools:** Analyze essays and personal statements, evaluating linguistic patterns and key themes aligned with admissions criteria.
- **AI recommendation systems:** Personalize admissions offers based on an applicant's likelihood of enrollment or scholarship eligibility.
- **Fraud detection tools:** Use algorithms to uncover anomalies or inconsistencies in submissions, safeguarding institutional integrity.

Advancement and fundraising

Cultivating donor relationships and running successful fundraising campaigns are essential for institutional sustainability. AI optimizes both areas, ensuring no potential opportunity is missed.

Sample challenges

- Identifying and engaging major donors
- Measuring and improving campaign effectiveness

How AI can help

- **Predictive donor analytics:** Identify alumni and potential donors whose giving history, wealth indicators, or affiliations suggest high engagement potential.
- **Natural Language Generation (NLG):** Craft personalized outreach communications while freeing advancement teams to focus on relationship building.
- **AI performance tracking tools:** Measure what works in fundraising campaigns and pinpoint where improvement is needed.
- **Sentiment analysis:** Monitor donor feedback to maintain strong, trust-based relationships.

Operations: Finance and HR

The ability of AI to identify patterns, trends, and risks using data from multiple sources can help improve operational efficiency for departments whose work often overlaps, such as finance and human resources.

Sample challenges

- Managing repetitive yet essential tasks, such as payroll or budgeting
- Deriving actionable insights from historical administrative data

How AI can help

- **Financial forecasting tools:** Enhance budget planning by predicting future revenues and expenditures.
- **AI-enabled payroll systems:** Automate benefits management processes and queries to enhance the employee experience.
- **Recruitment analytics:** Identify faculty and staff hiring trends to improve strategies and retention efforts.
- **Robotic Process Automation (RPA):** Automate routine tasks like invoice approvals or compliance audits, adding speed to operations.

Recruitment marketing

By adding data-driven decision making and more precise targeting, AI can support the ability to identify and interact with prospective applicants.

Sample challenges

- Attracting qualified applicants amid intense competition
- Identifying prospects across demographics and geographies
- Personalizing outreach and engaging with prospects consistently and authentically

How AI can help

- **Predictive analytics:** Identify prospective students who are most likely to apply or enroll based on data such as academic history, location, or online behavior.
- **AI-driven chatbots:** Provide real-time, 24/7 responses to applicant queries.
- **Dynamic content delivery:** Customize recruitment materials (emails, brochures, and digital ads) tailored to individual user preferences — ensuring relevance and resonance.
- **Customized demographic analysis:** Refine recruitment strategies with a more precise understanding of regional and cultural contexts.



Research compliance

Navigating stringent research compliance requirements can be challenging for both novice and experienced researchers and administrators. AI can be harnessed to help simplify and support investigators and researchers in completing the necessary steps of submission development and compliance review, maximizing the available time of all parties involved.

Sample challenges

- Navigating complex institutional landscapes of varying compliance, review, and offices and requirements
- Developing required forms and materials necessary to support external and institutional compliance requirements
- Identifying potential risks or misconduct early
- Keeping detailed records in alignment with evolving regulations

How AI can help

- **Guidance summaries:** Generate summaries at both the general level (e.g., based on regulations and institutional policies) and the study or project-specific level (e.g., based on awards or agreements) to provide key content for those operationalizing or monitoring research compliance.
- **AI-driven compliance monitoring:** Ensure adherence to complex rules by proactively flagging high-risk areas or violations.
- **Auto-populating compliance form content:** Integrate trained LLM functions with existing electronic research systems to auto-populate form content based on available data.

Research operations

Innovation and discovery depend on securing and carefully managing research funding from multiple sources. AI can help improve sponsor award identification and management to increase operational efficiency.

Sample challenges

- Connecting researchers with relevant opportunities and collaborators to generate compelling proposals
- Managing large award portfolio efficiently to optimize recovery
- Executing tasks that involve significant data, such as award setup, expenditure monitoring, and data reporting

How AI can help

- **AI-enabled collaboration platforms:** Match researchers with complementary interests, fostering innovation.
- **AI tools for grant proposals:** Review sponsor award notices, compile critical award details, recommend funding opportunities, and manage application tracking.
- **Workflow automation:** Automate award management processes like award setup, reporting, and closeout.



Student success

Higher education's mission is to empower students to succeed on campus and in life. AI provides tools to identify at-risk students and deliver personalized support to boost retention.

Sample challenges

- Detecting and addressing factors contributing to academic performance
- Providing scalable solutions for individualized learning

How AI can help

- **Early warning systems:** Use data analytics to flag at-risk students based on attendance records, grades, or behavioral changes.
- **Personalized learning platforms:** Recommend courses and materials tailored to individual learning styles and performance.
- **AI virtual tutors:** Offer instant, context-aware academic assistance.
- **Sentiment analysis:** Gauge student satisfaction and engagement by analyzing quantitative and qualitative feedback, including surveys and online posts.



How to get started with AI in higher education and research

As you take steps to implement AI solutions, Huron recommends the following ways to move toward meaningful action:

- **Establish institutional AI guidelines:** Developing ethical principles and general guidelines regarding AI before implementing solutions will ensure consistent and appropriate use of AI across the institution.
- **Start small and be specific:** Focus on a particular function or business process with a highly repetitive or data-intensive task. Using AI to complete small, daily tasks can immediately increase ROI through efficiency gains and create buy-in from staff who get time back.
- **Remember the human element is key:** AI should never replace human judgment and creativity, operate without continuous vigilance, or make ethical decisions independently. Training staff on how AI can supplement their abilities is critical for empowering employees to make the most of AI.

When thoughtfully integrated, AI doesn't just replace time-consuming processes — it elevates them, amplifying human capacity across all facets of higher education and research administration.



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