EAB

Aligning Artificial Intelligence with University Strategy

How Much Are You Personally Using AI?

Never
Tried It

Tried It
Once or
Twice

Use It
Regularly

Daily
Power
User

EAB

Five Transformative Opportunities for AI in Higher Education

We Already Use AI Every Day

AI Well-Established Across Many Industries

1. Healthcare:
- Medical diagnosis and treatment
- Drug discovery and development
- Surgical robots and assistive technologies
- Mental health support

2. Transportation and Automation:
- Self-driving cars and vehicles.
- Traffic management and optimization
- Delivery drones and robots
- Automated manufacturing and industrial processes

3. Business and Finance:
- Fraud detection and risk management
- Personalized marketing and customer service
- Investment analysis and trading
- Business process automation

4. Environmental Sustainability:
- Renewable energy prediction and optimization
- Climate change modeling and mitigation:
- Environmental monitoring and conservation
- Precision agriculture

5. Entertainment and Creativity:
- Personalized content recommendations
- Virtual assistants and chatbots
- Gaming and virtual reality

Source: Google Bard

What Changed in November 2022?

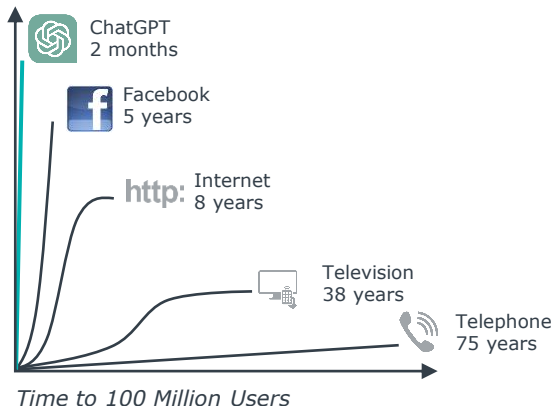## ChatGPT Put AI in the Hands of Every Individual with a Mobile Phone

What is Generative AI?

Latest development in AI that refers to deep-learning models that can **generate high-quality text, images, and other content** based on the data they were trained on.[1]

ChatGPT's Meteoric Adoption Rate Sets Historical Precedent

Time to 100M Users By Technology

ChatGPT
2 months

Facebook
5 years

Internet
8 years

Television
38 years

Telephone
75 years

Time to 100 Million Users

Generative AI Reaches Inflection Point Due to Unique Developments

▶ **Accessible and User-Friendly**

Web-based access allows anyone to use AI via everyday devices like PCs and phones. Users can use simple text prompts to deliver commands and process outputs.

▶ **Trained on Vast Knowledge Base**

Models are trained on large sets of data (e.g., books, web texts, and articles from billions of Internet webpages)

▶ **Generates New, Human-like Content**

Tools can generate new, creative content across domains (e.g., text, images, software) that is often indistinguishable from human outputs

OpenAI   DeepMind   Stable Diffusion   xkool   DeepL

Initial Focus on Threats and Opportunities in Teaching and Learning

1 **Release Institutional Statement Embracing AI**

24 Russell Group University vice-chancellors released a five guiding principles statement encouraging the ethical use of generative AI in classrooms and offices

2 **Offer Hands-On AI Literacy Training for Staff**

Auburn University developed a Teaching with AI online Canvas course, which ~700 lecturers have already completed

3 **Host AI Teaching and Learning Workshops For Lecturers**

The **University of Manchester** launched a three-part series on AI and University Futures, focusing on critical AI literacy, assessment reform, and training for academics

4 **Provide Funding or Classroom Experimentation**

Stanford University offers lecturers seed grants up to $100,000 to explore how AI can be applied in teaching and learning

AUBURN UNIVERSITY

Auburn's free, self-paced, and interactive Teaching with AI course consists of eight modules, which take 10 to 25 hours to complete.

Key Course Elements

- Provides a structured approach to experimenting with AI tools and rethinking classroom experiences

- Suitable for beginners and experts

- Offers academics a forum to discuss topics related to AI in the classroom

- Dynamically updated based on developing best practices

Source: Biggio Center, "Teaching with AI @ Auburn", *Auburn University*, 2023; Department of Writing and Rhetoric, "Russell Group principles on the use of generative AI tools in education, 2023; Generative AI and University Futures Seminars, May 2023; Stanford Center for Human-Centered AI, "Grant Programs", *Stanford University*, 2023; EAB interviews and analysis.

AI and the Future of Higher Education:
Five Transformative Opportunities

Incorporate AI into the Curriculum to Match
Societal and Workplace Changes

Provide 24/7, Personalised Student Support
With One-Stop Conversational AI

Supercharge Academics and Staff
Productivity to Pursue More Strategic Tasks

Maximise Enrolment and Advancement Yield
With Hyper Personalised Content Generation

Transcend Historical Bounds of Innovation
in Research by Using AI to Expand
Human Capabilities

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AI and the Future of Higher Education

1

Incorporate AI into the Curriculum to Match Societal, Workplace Changes

AI Reconstructs Nature of Work Across Industries

AI Disruptions Across Industries

Before Generative AI

After Generative AI

TV & Movie Writing:
Studios rely on writers for source material and actors for performances

Writers & Actors on Strike
"Generative AI writes scripts and creates backdrops, replacing writers and background actors"

Legal Services:
Only basic document review can be automated or outsourced

Rise of Robot Lawyers
"Research finds nearly half of legal work could be automated"

Graphic Design:
Designers create projects based on preset visuals, fonts, and layouts

Designs on Steroids
"Microsoft Designer tool generates complex designs in an instant based on text descriptions"

Software Engineering:
Engineers write code to implement software functionality using various programming languages

2X Faster with AI
"McKinsey study show software developers complete coding tasks up to twice as fast with generative AI"

Sources: A Dalton, "Writers strike: Why A.I. is such a hot-button issue in Hollywood's labor battle with SAG-AFTRA", *Fortune,* July 24, 2023; M Diaz, "Microsoft Designer brings AI-powered graphic design to the masses", ZDNet, April 27, 2023; S Lohr, "AI Is Coming for Lawyers, Again", McKinsey & Company, "Unleashing developer productivity with generative AI", *McKinsey Digital,* June 27, 2023; EAB interviews and analysis.

Demand For AI and Machine Learning Roles Surge...

53%

Increase in demand for AI/machine learning engineers since 2020

+1M

Projected growth of AI/machine learning jobs from 2023-2027

...But Need For AI Skills Extend Beyond Tech Roles

2023 Job Descriptions on Indeed.com

Graphic Designer
Qualifications & Skills

▸ Familiarity with AI and ChatGPT technology, utilising it to enhance multimedia projects

Protein Sciences Research Scientist
Qualifications & Skills

▸ Experience utilising artificial intelligence protein design, SAR, or related biological applications

Content Writer, Editor, and Researcher
Qualifications & Skills

▸ Proficiency in prompting and navigating AI tools such as ChatGPT

Source: J Gafner, Best Jobs of 2023, *Indeed.com*, May 18, 2023; Indeed, Job Search, *Indeed.com*, July 21, 2023; World Economic Forum, Future of Jobs Report, *World Economic Forum*, May 2023; EAB interviews and analysis.

Three University Pilots to Expose Students to AI

THE UNIVERSITY *of* ADELAIDE

V VANDERBILT UNIVERSITY

香 港 大 學
THE UNIVERSITY OF HONG KONG

How Do I? AI Guide

- The University of Adelaide library offers a **detailed AI guide**, including resources on **AI tools for study, referencing,** and **academic integrity**

- The website also provides links to free online resources and skills development for generative AI, such as **intro to ChatGPT**

Student Training Offerings

- Vanderbilt University offers **extensive AI training**, including workshops on generative AI and **online course** on **prompt engineering** to enhance AI response quality

90,000

students took **three-week course** over summer of 2023

Subsidising Extensive Access

- University of Hong Kong purchased every student half a million tokens for GPT-3.5 and DALL-E 2. Total cost of $1-2 per student per month

- University also pays half of access fee ($250K total) for Coursera Campus partnership for 5,000 students, including 100+ of AI modules

- Welcome emails include expectations for AI use in courses, description of university resources to support AI training

Key Elements of the University of Florida's AI Initiative

UF | **Artificial Intelligence**
UNIVERSITY of FLORIDA

Top-Down Approach to AI
UF President and Provost strongly encouraged and incentivised incorporation of AI across all 16 colleges

AI-Specific Academics Hired
UF hired 100 new academics with AI backgrounds or experience across disciplines, with each college receiving at least one new hire

AI Courses Across All Disciplines
230 AI courses offered at undergraduate, graduate, and professional levels, and range from introductory to subject-specific

AI Pathways Career Coach
Career centre staff educate students on the use of AI in the job recruitment process

Course Offerings

- ☑ AI in Agriculture and Life Sciences
- ☑ Business Applications of Artificial Intelligence
- ☑ AI in Healthcare and Public Health

Research Applications

- AI System Detects Bruised Strawberries Before Market
- Building Equitable Workplaces with AI Technologies
- AI Platform Predicts Surgical Complications

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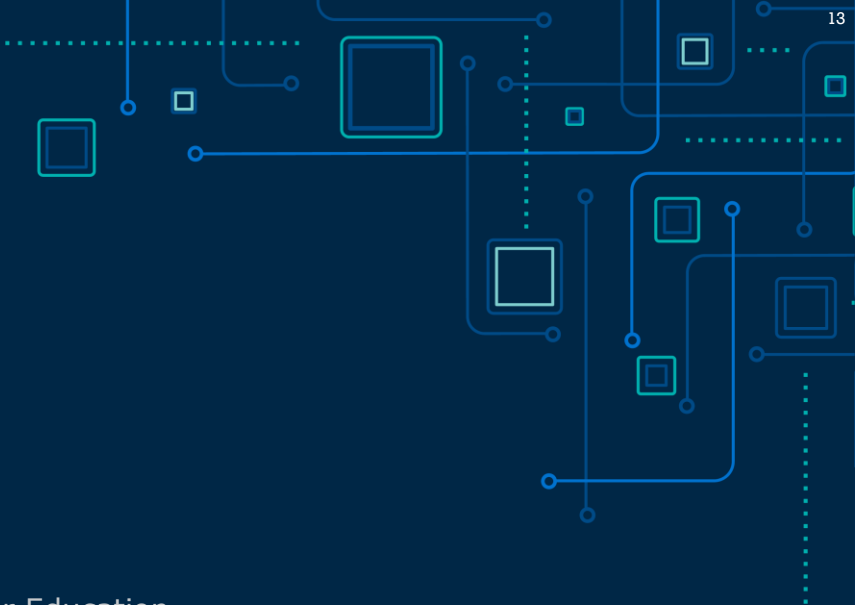
AI and the Future of Higher Education
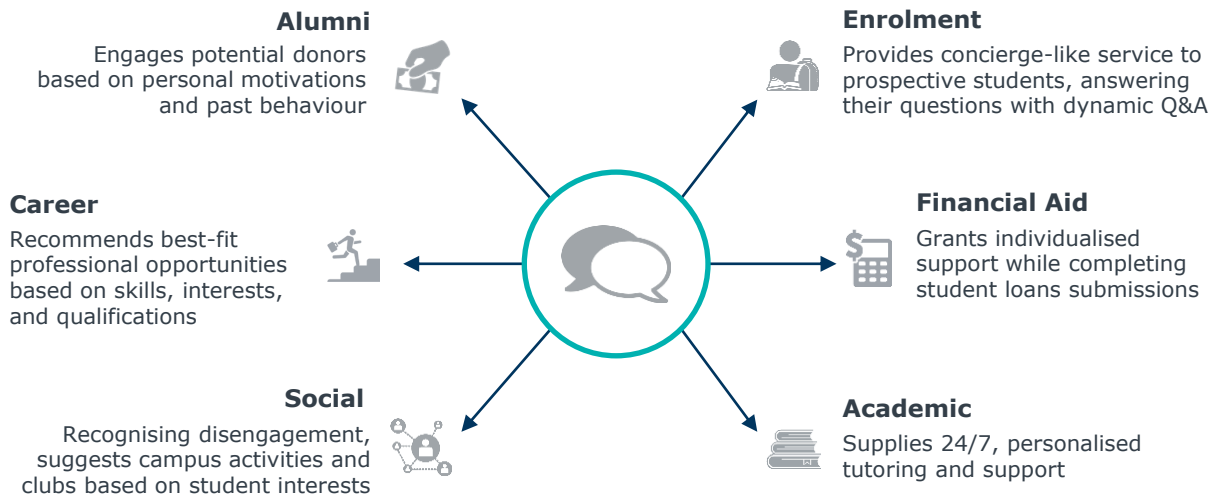
TRANSFORMATIVE OPPORTUNITY

2

Provide 24/7, Personalised Student Support with One-Step Conversational AI

How One-Stop Conversational AI Preempts Common Service Pitfalls

Alumni
Engages potential donors based on personal motivations and past behaviour

Enrolment
Provides concierge-like service to prospective students, answering their questions with dynamic Q&A

Career
Recommends best-fit professional opportunities based on skills, interests, and qualifications

Financial Aid
Grants individualised support while completing student loans submissions

Social
Recognising disengagement, suggests campus activities and clubs based on student interests

Academic
Supplies 24/7, personalised tutoring and support

Source: EAB interviews and analysis.

The Tutor That Never Sleeps

Khan Academy Launches Conversational AI Tutor Personalised to Students

Khanmigo
AI power

This conversation is recorded and viewable by your parent and teacher.

Can you just tell me the answer?

It's important that you learn how to do this yourself! What do you think you need to do to multiply 2 by 5/12?

They need the same denominator.

That's a good thought, but in this case, you don't need to find a common denominator because you're multiplying, not adding or subtracting. What else could you try?

Type message (do NOT share any personal data)

Clear chat

Case in Brief: Khanmigo, AI Tutor

▶ Khanmigo supports real-time, one-on-one tutoring personalised to students.

▶ The conversational AI operates on GPT-4 and is trained on Khan Academy's learning content.

How Students Can Use Khanmigo

Coach writing

Serve as a debate partner

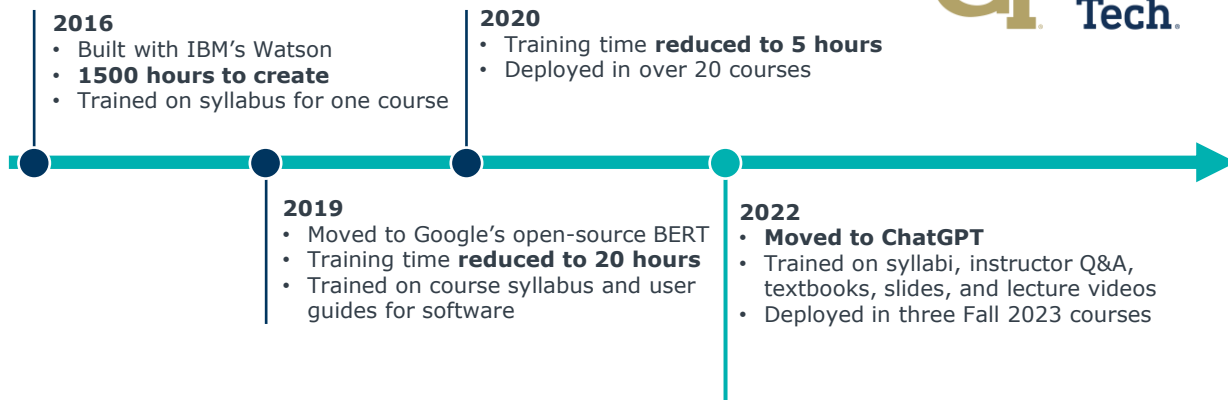Assist with coding

Converse with historical figures

Additional guardrails prevent Khanmigo from outright giving students answers when they are struggling and ensure Khanmigo always keeps an encouraging tone

Source: N Bidarian, "Meet Khan Academy's chatbot tutor", *CNN Business*, August 21, 2023; Khan Labs, "World-class AI for education", *Khan Academy,* 2023; EAB interviews and analysis.

Jill Watson is an AI-powered virtual teaching assistant (TA) tailored to individual courses, that saves instructor time by answering student questions the way a human instructor would.

Developmental Timeline of Jill Watson

2016
- Built with IBM's Watson
- **1500 hours to create**
- Trained on syllabus for one course

2020
- Training time **reduced to 5 hours**
- Deployed in over 20 courses

2019
- Moved to Google's open-source BERT
- Training time **reduced to 20 hours**
- Trained on course syllabus and user guides for software

2022
- **Moved to ChatGPT**
- Trained on syllabi, instructor Q&A, textbooks, slides, and lecture videos
- Deployed in three Fall 2023 courses

ChatGPT Pushes Jill Watson Beyond Basic Student Inquiries

- The AI teaching assistant can now not only answer basic student course questions, but **tutor students on course content** (e.g., explain course topics, help with assignments)

- Jill Watson serves as an intermediary, fact-checking ChatGPT responses before sending to students, **reducing the hallucination rate in ChatGPT from 40% to 11%**

Source: "AI-Powered Adaptive Learning: A Conversation with the Inventor of Jill Watson", *Online Education*, May 13, 2020; Georgia Institute of Technology, "Jill Watson: A Suite of Online Learning Tools", *Design & Intelligence Lab*, October 20, 2017; J Preston, "Jill Watson, an AI Pioneer in Education, Turns 4", *Georgia Tech,* January 24, 2020; J Young, "Georgia Tech Is Trying to Keep a ChatGPT-Powered Teaching Assistant From 'Hallucinating'", *EdSurge,* June 22, 2023; EAB interviews and analysis.
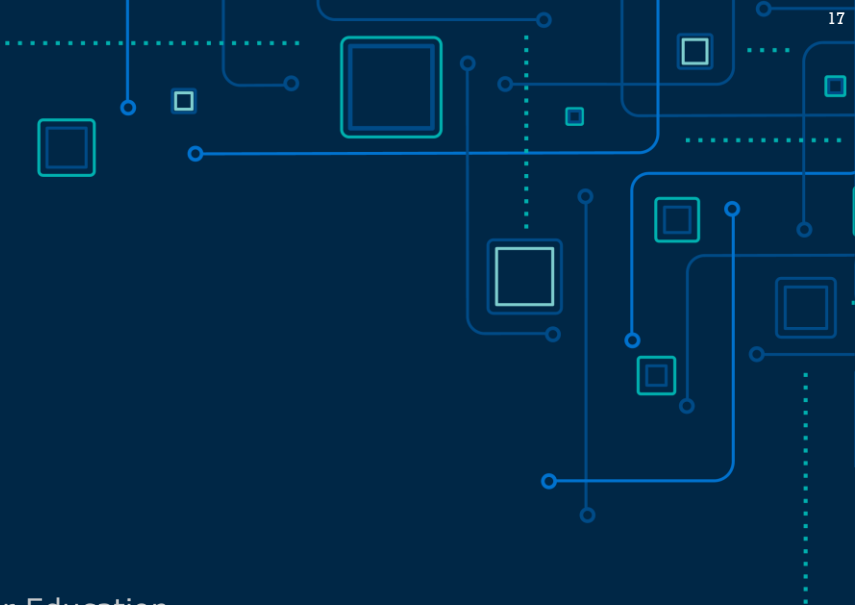
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AI and the Future of Higher Education

3

Supercharge Academics and Staff Productivity with AI Efficiency Tools

Generative AI Projected to Augment Majority of Roles…

2/3

Of current jobs are exposed to some degree of AI automation

…Already Leading to Workforce Displacement

1 in 4

Companies have already replaced employees with ChatGPT

Private Sector Augmenting their Staff with Conversational AI Bots

Morgan Stanley

▶ Morgan Stanley trained GPT-4 on 100,000 of its bank and research documents for its financial advisors (FAs)

▶ FAs can now ask the AI bot anything from general business queries to investment strategy recommendations

pwc

▶ PwC developed a conversational AI bot that expedites tasks from contract analysis and due diligence to legal and consulting services

▶ The AI bot is now in use by 4,000+ PwC lawyers in 100+ countries

Source: I Anghel, "PwC Introduces AI Chatbot for 4,000 Lawyers to Speed Up Work", *Bloomberg,* March 15, 2023; J Briggs et al., "The Potentially Large Effects of Artificial Intelligence on Economic Growth", *Goldman Sachs*, March 26, 2023; McKinsey & Company, "The economic potential of generative AI: The next productivity frontier", *McKinsey Digital*, June 14, 2023; Resume Builder, "1 in 4 companies have already replaced workers with ChatGPT", February 27,2023; EAB interviews and analysis.

RPA (Robotic Process Automation) in Brief

Method of training artificial intelligence or software "bots" to mimic human behavior, allowing them to perform high-volume, repeatable tasks

Tasks Suitable for RPA Implementation

▶ High-volume manual processes

▶ Repetitive tasks

▶ Tasks with multiple steps

▶ Tasks requiring multiple digital interfaces

Sample RPA Applications

- Reconcile employee IDs across multiple HR systems
- Automate the upload of student documents
- Pinpoint expired employee credit card accounts

- Reconcile student coursework with graduation requirements
- Automate processes for booking rooms for meetings, events, etc.
- Process purchase-orders invoices
- Create tagged records in student portals for communication from student services

Select Institutions Using RPA

RUTGERS
THE STATE UNIVERSITY OF NEW JERSEY

Carnegie Mellon University

THE UNIVERSITY OF SYDNEY

NYU

Source: B Duncan & K Lundy, "Robotic process automation (RPA) for colleges and universities," *Ernst & Young*, December 11, 2019; N Jackson, "Robots Welcome," *Business Officer*, December 2019; Carnegie Mellon University, Pittsburgh, PA; New York University, New York, NY; Rutgers University, New Brunswick, NJ; University of Melbourne, Melbourne, AU; University of Sydney, Sydney, AU; University of Texas System, Austin, TX; EAB interviews and analysis.

Repeated Successes Along the University of Melbourne's Robotic Process Automation (RPA) Journey

▶ **Enrollment:** Student exam results collated and entered into enrollment system, replacing need for additional data entry staff

▶ **Procurement:** New supplier registered in the procurement system within 30 minutes, replacing the previous 5-day queue

▶ **IT:** System access established for new employees in 10 minutes, replacing the previous three-week wait time

▶ **HR:** Automated verification of all timesheet adjustments removing need for manual checking of adjustments

▶ **Contract Management:** New contracts automatically recorded without the need for manual checking and approvals

THE UNIVERSITY OF
MELBOURNE

"Administrative tasks are very repetitive, very rule-based. RPA was brought into the University of Melbourne to reduce the high-volume tasks so **we can actually do more data analysis and gather more insights into what students actually want**."

Shiv Chandra
RPA Manager, University of Melbourne

22
RPA applications

10K
Hours of labor saved annually

What's Next?

Melbourne will train internal "RPA Champions" to utilize open-source RPA tools, thus avoiding expensive external hires and encouraging bottom-up use cases for RPA technology

AI Staff Productivity Boons Throughout Departments

Modest Bets to Augment

Admissions

Maryville University used Sia to automate transcript review, affording 14 admissions counselors **50% more time to build deeper relationships with students** through online and social media campaigns

Procurement

University of Florida uses AI tools to review contracts and ensure regulatory compliance in a matter of **minutes instead of hours**

Big Bets to Replace Staff

Registrar

By automating **transfer credit evaluation**, Maple University[1] projects being able to achieve a **90% reduction in staff** required for this task

Enrolment Marketing

Maple University[1] projects that they will be able to **cut marketing costs by 40-50%** once they start using AI to help in their marketing campaigns

1) Anonymized institution.

Source: Maryville University, Town and Country, MO; University of Florida, Gainesville, FL; EAB interviews and analysis.

Teaching & Learning

Academics

Research

Course Planning

Louisiana State University's Provost was able to generate a syllabus for an [interdisciplinary AI course](#) in **one hour as opposed to days** using ChatGPT.

A+
Grading

A professor at DuPont University[1] uses an AI grading tool to evaluate written content, **reducing the time she spends grading** and instead focuses more on teaching and research.
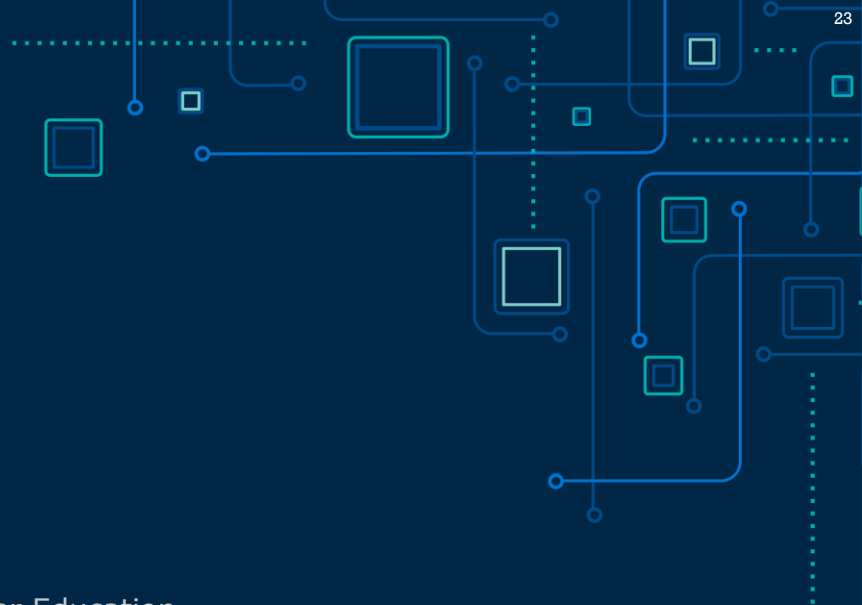
Brainstorming

A postdoc at the University of South Denmark used ChatGPT to create an outline for a journal article, which he estimates **saved 20 hours of work**.

Grant Writing

Students at the University of Oregon developed [ChangeFinder](#), a tool using ChatGPT technology, that **streamlines the grant writing process** by providing suggestions to user's responses to grant questions.

---

1) Anonymized institution.

Source: A Knepper-Sjoblom, "[ChangeFinder AI Eases Grant Process](#)", *University of Oregon*, April 14, 2023. C Bello, "[The best AI tools to power your academic research](#)", *Euronews*, June 8, 2023; "[Guidelines for the use of Artificial Intelligence](#)", *Chapman University*, 2023; C Chun, "[Why some college professors are adopting ChatGPT AI as quickly as students](#)", *CNBC*, April 2, 2023; Columbia College Chicago, Chicago, IL; Louisiana State University, Baton Rouge, LA; EAB interviews and analysis.

AI and the Future of Higher Education

4

Maximise Enrolment and Advancement Yield with Hyper Personalised Content Generation

Progressive Stages of Outreach Personalisation

Enrolment sends prospects a **mass mailer** with general campus information.

Prospects receive emails **in the voice of the dean** and including program information most aligned with their academic interests.

Prospects receive **custom outreach** based on academic/personal interests via **preferred modality and communication channel**.

AI Enables Personalisation At-Scale By...

▶ **Modulating the tone** of outreach based on both the **sender and recipient**

▶ **Generating content across modalities**, whether through a video, infographic, or interactive webinar

▶ **Curating individualized content** based on recipients' background and interests

▶ **Automating** parts of every step of the outreach process **from content creation to delivery**

Use AI to Hyper Personalise and Scale Outreach

Two Ways USC's Annual Giving Team Used AI-Generated Messaging

Improved Yield and Time Savings

1 High-Volume Giving Day Outreach

- Used ChatGPT to generate messages for high-volume annual Giving Day campaign
- Customised messages based on past donor behaviour and written in the voice and tone of the giving team

Highest number of Giving Day donors in 6 years
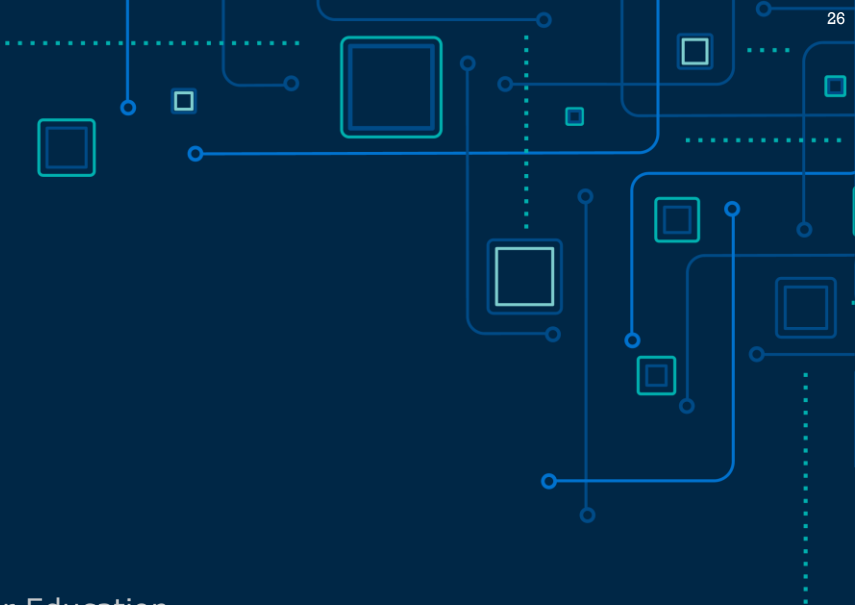
2K First-time donors

2 Fiscal Year-End Appeals in the Dean's Voice

- Composed 392 appeals written in the voice of Deans from 20+ departments
- Team provided ChatGPT examples of previous Dean's appeals, fund descriptions, and donor history
- Nearly zero edits needed

392 Letters generated in a few hours

+2 Weeks of staff time saved

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AI and the Future of Higher Education

5

Transcend the Historical Bounds of Innovation in Research by Using AI to Expand Human Capabilities

AI Redefines What is Possible in Research…

▶ **Protein Design**

DeepMind

AlphaFold, a DeepMind AI system, can accurately predict 3D models of protein structures – only a fraction of which have been studied because it is an expensive and time-consuming process.

▶ **Synthetic Clinical Data**

UF FLORIDA   NVIDIA.

NVIDIA and **University of Florida Health**'s neural network, SynGatorTron, generates synthetic clinical data that mimics real populations without the risk or privacy concerns of human data

▶ **Speech Pathology**

nsf

National AI Institute for Exceptional Education is developing an AI Screener to monitor students' speech and language processing abilities by observing classroom interactions (e.g., speech, facial expressions)

…As Governments Commit Unprecedented Levels of Funding

U.S.A

- Invests $140 million to establish seven new national AI research institutes after spending $3.3 billion on AI research in 2022

Canada

- Awards nearly $1.4 billion for AI and robotics research in largest-ever federal university grant

U.K.

- Announces £54 million investment to develop trustworthy AI research

Germany

- Plans to double public funding for AI research to nearly €1 billion over next couple of years

Source: A Costa, "Unlimited Data, Unlimited Possibilities: UF Health and NVIDIA Build World's Largest Clinical Language Generator", *NVIDIA*, March 22, 2022; C Nealon, "UB awarded $20 million to establish national AI institute", *University of Buffalo,* January 10, 2023; C Smith, "£54 million boost to develop secure and trustworthy AI research", *Department for Science, Innovation and Technology,* June 14, 2023; DeepMind, "AlphaFold", *Google*, 2023; N O'Neill, "Largest-ever federal university grant awarded for AI and robotics research, as part of $1.4B fund", *CTV News*, April 28, 2023; T Escritt & D Syamnath, "Germany plans to double AI funding in race with China, U.S.", *Reuters*, August 23, 2023; University of Florida, Gainesville, FL; EAB interviews and analysis.

Five Ways in Which AI Will Shape Tomorrow's Campuses

1

Personalised Support

AI will drive **personalisation for everyone** – from tailoring student support and marketing content to each student to providing all staff role-specific AI assistants.

2

Productivity Gains

AI will usher in a **new era of productivity,** saving everyone from faculty to staff time so that they can assume new and more strategic responsibilities.

3

Versatile Connections

The ability to interact with AI multi-modally through **voice**, **visual cues,** and **touch** (and AI's ability to respond in kind), will make AI more accessible and widely applicable.

4

AI Use Simplified

AI tools will be designed for **ease**, allowing those **without technical backgrounds** to create new apps in seconds and harness their power in the classroom and beyond.

5

AI Will Be Ubiquitous

From **lecture halls** to **dorm rooms**, AI-driven tools and bots will be seamlessly integrated into **every facet** of the campus.

Prioritizing Opportunities in AI

Exercise (60 min)

➢ Form groups of 2-3 (but do the exercise for your own uni)

➢ Brainstorm list of use cases individually [5 min]

➢ Review list with group, add anything missing [15 min]

➢ Score each item on impact vs required investment [10 min]

➢ Discuss with group [15 min]

➢ Score each of the top priorities on risk [5 min]

➢ Discuss with group [10 min]

Use Case	Impact (low = 1, high = 5)	Investment (low = 5, high = 1)	Combined Score (A X B)	Risk (low =1, high = 5)
Course-specific AI tutor	1	2	2	
Message generator for philanthropy solicitations	4	4	16	4

AI Governance

Early Insights on Making Decisions and
Setting Institutional Strategy around AI

IT Strategy Advisory Services

This Is a Governance Issue, Not a Technology Issue

> "The real dilemma is that institutional governance at universities is catastrophically slow. By the time a new policy is approved it is out of date immediately. Establishing principles and guidelines is a more iterative approach, but, ultimately, we need to accommodate this within standard university governance like any other technology."
>
> *PVC Teaching and Learning*

Existing Governance Models Not Prepared to Address the Full Range of AI Issues

- Academic Governance
- IT Governance
- Data Governance
- Digital Transformation Initiatives
- Research Ethics Committees
- Curriculum Review Committees

How Can the University Help Staff Manage These Risks?

1. Ethical and Bias Issues:

- Algorithmic bias
- Lack of transparency and explainability
- Privacy concerns

2. Academic Integrity and Cheating:

- AI-powered plagiarism tools
- Automated essay grading
- Contract cheating services

3. Job Displacement and Automation:

- Automation of administrative tasks
- Impact on faculty roles
- Skills gap and educational needs

4. Cybersecurity and Surveillance:

- Increased vulnerability to cyberattacks
- Student surveillance and privacy
- Transparency and oversight
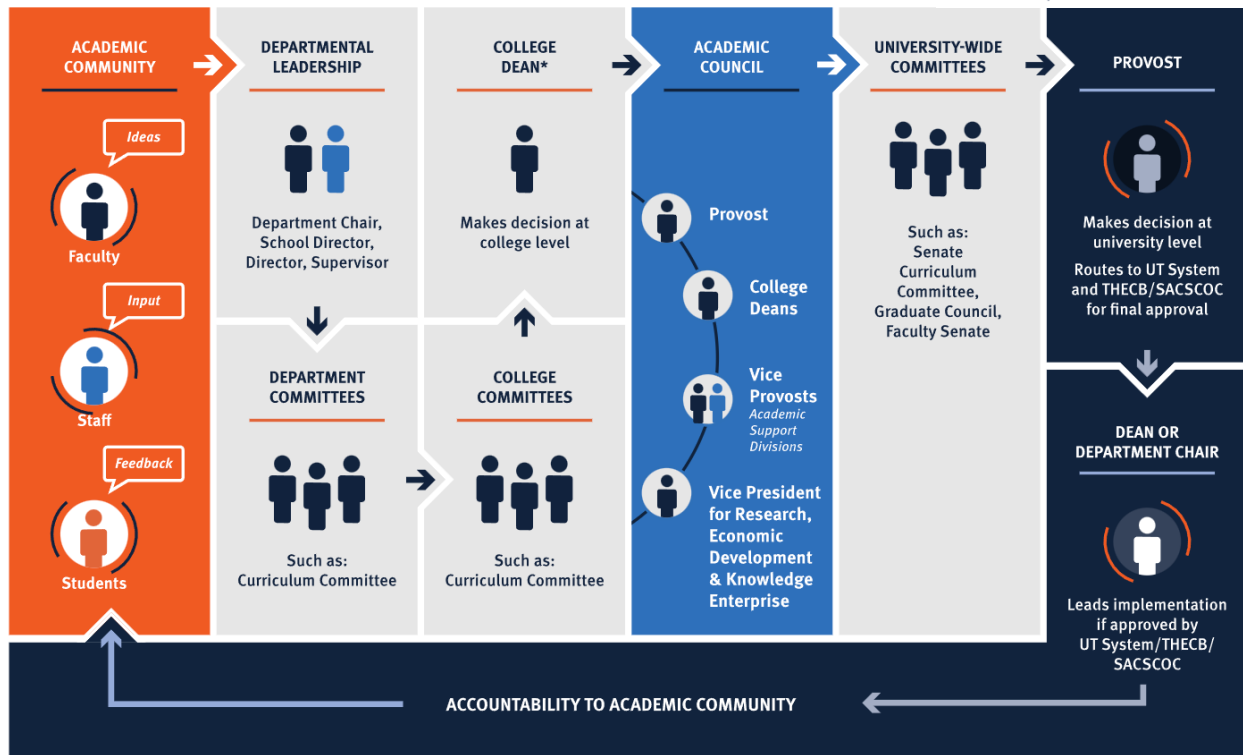
5. Overreliance on Technology and Dehumanization:

- Dependence on AI solutions
- Loss of personal interaction and human connection
- Need for a human-centered approach

Source: Google Bard

Shared Governance for **Academic** Matters

Scope of Responsibilities Needs to Fit Institutional Culture

Advise & Inform
Two-way communication re: stakeholder needs and IT activity

Develop Policy
Draft policies and standards to promote institution-wide compliance

Coordinate
Surface & scrutinize tech initiatives to prevent duplication and waste

Prioritize
Evaluate and rank major projects to optimize strategic impact

Advisory only   *Limited governance*   *Strong governance*

Policies and Processes to Aggregate, Standardize and Improve Campus Data

Data Governance in Action

Inputs

Locally Input Data

Operational Data

Contextual Data

Governance Process

- **Policies and Processes** for decision-making set during governance design phase
- **Strategic Focus** determined by campus leaders and data needs
- **Implementation** undertaken by governance working groups and data stewards

Outputs

Common Data Definitions

Principled Data Access Rights

Data Quality Improvements

Source: EAB interviews and analysis.

Digital Transformation Supports Organizational Change

Digital transformation does not happen by itself; rather, it requires the development of concrete practices, infrastructure, and skills—collectively, **capabilities**—that create an environment in which transformation can flourish.

Specifically, digital transformation requires both **organizational capabilities**, which help drive cultural change, as well as **IT capabilities**, which ensure the technological infrastructure is equipped for transformation at scale.

Core Organizational Capabilities

1 **Executive Sponsorship for Digital Ambitions**

Does your senior management understand the necessity of digital innovation for both organizational continuity and market relevance?

2 **Process and Customer Journey Mapping**

Do you understand and regularly collect input from students, staff, and alumni about digital expectations?

3 **Portfolio-Minded Project Prioritization**

Do senior leaders on your campus agree on a process for evaluating and approving digital initiatives?

4 **Digital Literacy and Engagement Campaigns**

Does your campus recognize that promoting and enabling digital transformation requires campus-wide engagement and culture change?

Core IT Capabilities

1 **Integrated Digital Platforms**

Do you minimize costs in your technology portfolio through scalable enterprise architecture?

2 **Future-Oriented IT Skills**

Do you keep your digital strategy and agenda in mind when providing ongoing IT staff training and hiring new staff?

3 **Trend and Opportunity Sensing**

Are your IT staff motivated by change and actively engaged in environmental scanning, competitor analysis, and trend identification?

4 **Roadmap to Support and Scale Innovation**

Do you identify and pilot customer-driven innovations to ensure that any potential risks from new endeavors are contained?

What's New With AI?	How Can Leaders Maximize the Impact of AI Investments?

Democratized access to AI tools means pockets of experimentation are already budding across campus

1 **Harness grassroots AI experimentation** across campus

Working with AI demands **new and different skillsets**

2 **Build AI expertise** within and outside of IT

AI tools can **process more and different types of data** (i.e., unstructured data)

3 **Collect and govern data necessary** to leverage AI solutions

While AI Tech Is Still Nascent, Important to Keep Long Term Goal in Mind

Innovation Theatre

Pockets of innovation across campus, each one targeted to a small number of students, faculty, or staff

Example

- Computer science professor develops an AI teaching assistant using OpenAI's API
- Provost feeds course content into ChatGPT to create syllabi

Source: EAB interviews and analysis.

While AI Tech Is Still Nascent, Important to Keep Long Term Goal in Mind

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Digital Transformation

AI innovations are scaled to solve big problems for large segments of the campus community

AI tutor and teaching assistant

Example

Institution builds and deploys an AI tutor and teaching assistant faculty can customize to their courses

Miami CIO Convened a Full-Day AI Symposium for All Campus Stakeholders

15 Presentations from Faculty, Staff, and Students in Three Tracks

Policy, Law, and Changing Pedagogy
Exploring the implications of generative AI with IP and academic integrity

Academic
How will generative AI impact teaching and learning

General AI
A look into what generative AI is capable of and the risks associated with AI models

Sessions include:

- Generative AI and IP: Frenemies or BFFs?

- AI: The Future of Creative Teaching and Learning is Now

- ChatGPT vs. Google: A Comparative Study of Search Performance and User Experience

- Writing with Generative AI and Human-Machine Teaming: Insights and Recommendations from Faculty and Students

"There was way more interest than we imagined from across campus. Our **student government, enrollment office, and our president** all came up to me and volunteered to co-sponsor the symposium."

David Seidl, CIO
Miami University of Ohio

Dickinson

CIO Drives Presidential AI Working Group Focused on Operations

The Presidential Working Group on AI and LLMs[1] aims to address the operational implications of AI by developing a **comprehensive roadmap** that:

- Explores the responsible use of AI
- Identifies appropriate applications
- Shapes the future of AI integration

Involvement From Campus Stakeholders

Established based on the recommendation of the IT department, this group has members of faculty, students, and staff from various departments, including but not limited to:

- Finance and Administration
- Human Resources
- Enrollment Management
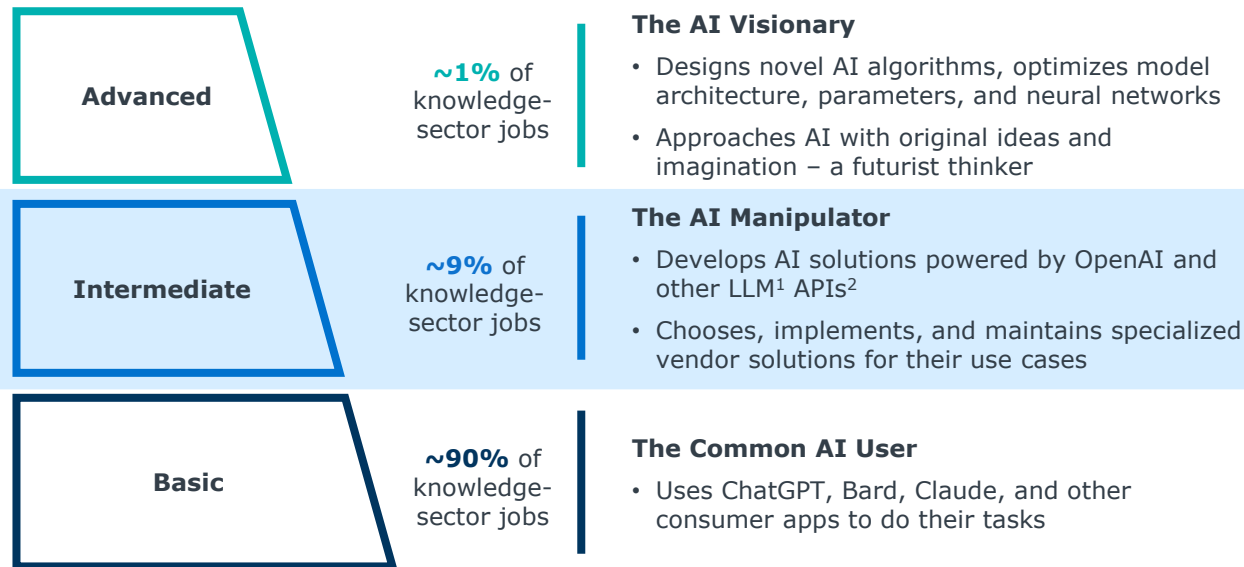
Group Focused on Both Short-Term and Long-Term Goals

▶ **Raise awareness** and foster understanding of AI and its use in working, teaching, and learning

▶ **Explore collaboration** with external organizations, industry experts, or academic institutions in AI

▶ **Assess the feasibility** and potential benefits of investing in AI tools

▶ Develop mechanisms to **evaluate the impact** and effectiveness of AI initiatives

▶ **Conduct policy reviews** to safeguard against abusive or illegal use of AI

▶ **Identify professional development** opportunities to upskill in AI for both employees and students

1) Large language models.

Source: Dickinson College, Carlisle, PA; EAB interviews and analysis.

Levels of AI Knowledge by Future Workforce Demand

Advanced	**~1%** of knowledge-sector jobs	**The AI Visionary** • Designs novel AI algorithms, optimizes model architecture, parameters, and neural networks • Approaches AI with original ideas and imagination – a futurist thinker
Intermediate	**~9%** of knowledge-sector jobs	**The AI Manipulator** • Develops AI solutions powered by OpenAI and other LLM[1] APIs[2] • Chooses, implements, and maintains specialized vendor solutions for their use cases
Basic	**~90%** of knowledge-sector jobs	**The Common AI User** • Uses ChatGPT, Bard, Claude, and other consumer apps to do their tasks

1) Large language model.
2) Application programming interface.

Source: EAB interviews and analysis.

Rise of AI Defines New Skillsets and Tasks for IT

1 Build and Train AI Tools

Skills:
- Generative AI Fundamentals
- Data Engineering
- UX Programming

Examples:
- Building specialized AI applications
- Training (e.g., prompt-engineering, fine-tuning) different AI tools
- Creating user interfaces

2 Provide Ongoing Monitoring and Maintenance for AI Tools

- Data Management
- Performance Monitoring
- GPUs and Storage

- Adding or removing data as needed and monitoring for degradation
- Regularly testing AI tools to ensure accurate outputs
- Monitoring system usage for sufficient processing power and data storage

3 Support Campus AI Tool Selection, Development, and Usage

- AI Landscape Knowledge
- AI Governance

- Understanding the tools available and use cases they are best suited for
- Providing knowledge of AI risks and regulations and governing data on campus

Source: EAB interviews and analysis.

IT Staff Takes Microsoft Workshop and Builds Institutional AI Bots

- Microsoft administered a workshop for 20 IT staff members on building AI bots.

- Staff were able to **build a proof-of-concept conversational AI bot** connected to UT Dallas' institutional knowledge base in only four hours.

Central IT Develops AI Tools for Distributed IT to Use and Experiment With

- Central IT team developed AI tools (e.g., produce notes from call recordings, help index and vectorize data) in a Llama sandbox environment.

- To encourage use and experimentation, central IT provided **training to IT department leaders on how to use AI tools and prepare departmental data** for them (e.g., index and vectorize internal knowledge bases).

Free, Online Courses Reduce Training Burden for IT Departments

Microsoft's AI Builder Challenge teaches users how to build AI models and explains how to use them.

Google offers a Generative AI Learning Path that covers LLMs, Generative AI fundamentals, and applying AI principles with Google Cloud.

The University at Buffalo **repositioned three IT staff as Principal Architects (PA) that primarily support campus AI use.** Before transitioning, PAs completed Microsoft trainings on AI capabilities within its suite of tools.

University at Buffalo

Principal Architects Support Campus AI Use Cases

Using ChatGPT in Teaching

Answering questions and partnering with faculty interested in using AI tools in class

Piloting AI Integrations

Piloting Zoom's new AI integration across several departments before rolling it out across campus

Training AI Models For Research Use

Working with the school of management to train a departmental instance of Llama on public data sets

CIO Plans to Hire for New AI Roles

The CIO has also allocated funding to hire three new AI staff, whose roles will focus on faculty support. Desired skills for new hires include:

✔ Knowledge of AI Tools   ✔ Programming   ✔ Data Visualization   ✔ Data Engineering

Centralized AI Leadership Positions Allow for Comprehensive Vision

Chief AI Officer

Background:

Western University created a Chief AI Officer role to lead the university through the AI frontier, acknowledging its transformative potential and the need for a strategic and informed AI leader

Job Responsibilities:

- **Educate** and **advocate** for the ethical use of AI technologies on campus

- **Understand** and **address** the interests and concerns of campus members

- Guide the **ethical integration** of AI into pedagogy and operations

- Make **strategic decisions** on how AI can be best utilized to benefit the university and its stakeholders

Enterprise AI Strategist

Background:

ASU created the Enterprise AI Strategist Role in IT to propel forward student outcomes, research pathways, and digital transformation with AI

Job Responsibilities:

- Implement a **university-wide** AI strategy in line with ASU's mission

- Lead **AI initiatives** under the CIO's direction, establishing AI governance

- Facilitate **interdisciplinary collaborations** to integrate AI

- Build **relationships** with industry, government, and research entities

Source: Arizona State University, "Job alert: ASU seeks forward-thinking enterprise AI strategist to chart the future", *Arizona State University*, October 25, 2023; J Hurley, "He's the first-ever chief AI officer at a Canadian university: How ChatGPT is changing post-secondary", *Toronto Star*, October 15, 2023; EAB interviews and analysis.

How IT Leaders Can Create a Sustainable Data Foundation to Scale AI Solutions

Identify and collect useful unstructured data sources

Ex: AI tutor

- Recorded lectures and notes
- Digital credentials and comprehensive learner records
- Campus surveys and pulse checks
- Library records
- Online interactions

Update policies to digitize, retain, and dispose unstructured data

For any data you envision using with AI tools, review:

- Digitization Policy
  - Ensure any physical data is digitized for the record
- Retention Policy
  - Prevent the disposal of potentially useful data (e.g., feedback surveys), while disposing of unnecessary data

Incorporate unstructured data into data governance processes

Consider the following questions:

- How can we securely store unstructured data while promoting ease of access?
- Who will own this data and ensure policies and hygiene are upheld?

EAB's Artificial Intelligence Resources:

Current Resources to Bring Back to Campus

Upcoming Events and Resources

Board and Cabinet Briefings on AI in Higher Education

Bring these insights to your campus. Equip your cabinet, board, or other stakeholders with a deeper understanding of the AI trends shaping higher education.

AI Promises Infographic

Learn more about the promises of artificial intelligence by requesting the latest ITSAS infographic from your strategic leader.

Presidential Experience Lab

Artificial Intelligence and the Future of Work

June 4-5, 2024 | Silicon Valley

- Join us on a tour with other Presidents we visit cutting edge technology companies and hear from leading academic practitioners to see how AI is already disrupting the world of work, learning, knowledge creation, and the creative arts.

AI Strategy Workshop

Prepare your campus for the AI future by participating in a strategy workshop led by EAB experts. Leaders will learn the key elements of AI strategy and begin to apply these lessons and develop a cohesive AI strategy for their own institution.

Source: EAB interviews and analysis.