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AI and the Future of Higher Education

Unpacking Myths and Exploring Opportunities

October 2023

Your Hosts for Today's Session

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Your Imperatives Determine Ours

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Prepare Your Institution for the Future

Executive guidance rooted in research to support your strategic priorities

MARKETING AND ENROLLMENT

Achieve Your Enrollment and Growth Goals

Tailored partnerships powered by a recruitment ecosystem with unrivaled reach to enroll your future classes

STUDENT SUCCESS

Build a Student-Centric Campus

Technology trusted by 850 schools to retain, graduate, and empower more students

DIVERSITY, EQUITY, AND INCLUSION

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We partner with 2,500+ institutions to accelerate progress and enable lasting change.

95%+ of our partners return to us year after year because of results we achieve, together.

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Four AI Personas Found Across the Cabinet

Stubborn Skeptic

Fearful Ignorant

Curious Examiner

AI Champion

"AI is just the latest overhyped piece of technology."

"I don't know anything about AI, but I am very worried about it."

"I know AI is worth paying attention to, but I don't know where to start."

"AI will transform every part of higher education."

AI Breaks the Mold of Technology Adoption

ChatGPT's User Base Grew Much Faster Than Other Tech Breakthroughs
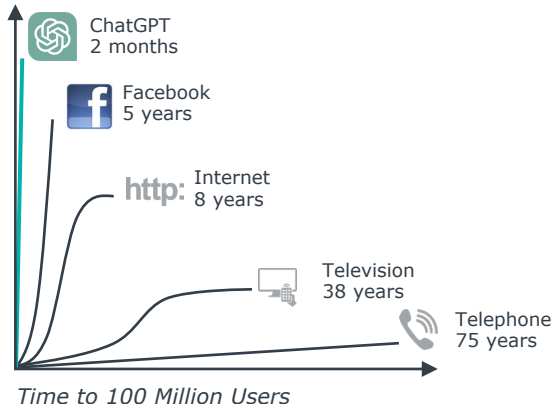
What is Generative AI?

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

http: 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

1) IBM Research definition.

Dispelling Three Myths About AI

Myth: AI is All Hype

Reality: **AI is Quickly Becoming a Staple in Everyday Life**

Mainstay Vendors Integrate Generative AI Into Key Offerings

- Google launches generative AI-powered search experience
- Microsoft releases Copilot throughout Office 365 Suite
- Adobe launches Firefly, generative AI for creators, across products

More Vendors Plan to Launch AI Offerings

EAB W G slate
aws Bb ocelot
grammarly ZOOM Sia

Myth: AI is Avoidable

Reality: **Students, Staff (Even Presidents) Already Using AI tools**

89%
Of students admitted to using ChatGPT in their coursework

67%
Of higher education staff reported using generative AI for their work in the 2022-23 academic year

Wells College president Jonathan Gibralter is among several higher ed leaders who used ChatGPT to craft parts of their graduation speech

Myth: AI is Too Risky for Universities to Adopt

Reality: **Licensed AI Tools Far Less Risky than Public Tools**

More Options to Insert Safeguards on Licensed Tools

- Institutions can negotiate security agreements with vendors
- Data not used to train public models

AI Risk Frameworks Follow Tried-and-True Templates

- National Institute of Standards and Technology (NIST) released an AI Risk Management Framework in 2023, following template of cybersecurity framework
- Focus is similarly on educating users on safe data practices

Source: C Westfall, "Educators Battle Plagiarism As 89% Of Students Admit To Using OpenAI's ChatGPT For Homework", *Forbes*, January 28, 2023; J Moody, The ChatGPT Commencement Address, *Inside Higher Ed*, June 29, 2023; M McCormack, "EDUCAUSE QuickPoll Results: Adopting and Adapting to Generative AI in Higher Ed Tech", *EDUCAUSE*, April 17, 2023; EAB interviews and analysis.

Do Not Pass Go; Do Not Collect $200

All Institutions Must Prepare Faculty to Incorporate AI Into Pedagogy

1 **Release Institutional Statement Embracing AI**

- **University of Southern California**'s Provost and Academic Senate released a joint statement urging faculty to encourage students to explore generative AI

2 **Offer Hands-On AI Literacy Training Programs**

- **Auburn University** developed a Teaching with AI online Canvas course, which ~450 faculty have already completed

3 **Host Faculty AI Teaching and Learning Workshops**

- The **University of Mississippi** launched a paid ($1,000 stipend) two-day AI Summer Institute for Teachers of Writing

4 **Provide Seed Funding For Classroom Experimentation**

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

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AU 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 faculty a structured approach to experimenting with AI tools and rethinking classroom experiences

- Suitable for AI beginners to experts

- Offers faculty 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, "AI Summer Institute for Teachers of Writing", *University of Mississippi*, 2023; P Crispen and C Neuman, "Instructor Guidelines for Student Use of Generative Artificial Intelligence for Academic Work", *University of Southern* California, February 13, 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

Prepare Your Students For the Future of Work by Infusing AI Across the Curriculum

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

Supercharge Faculty and Staff Productivity With AI Efficiency Tools

Maximize Enrollment and Advancement Yield With Hyper Personalized 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

TRANSFORMATIVE OPPORTUNITY

1

Prepare Your Students for the Future of Work by Infusing AI Across the Curriculum

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, utilizing it to enhance multimedia projects

Protein Sciences Research Scientist
Qualifications & Skills

▶ Experience utilizing 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.

Preparing Students for the Future Requires AI Integration into Coursework

**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 incentivized incorporation of AI across all 16 colleges

AI-Specific Faculty Hired

UF hired 100 new faculty 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 major-specific

AI Pathways Career Coach

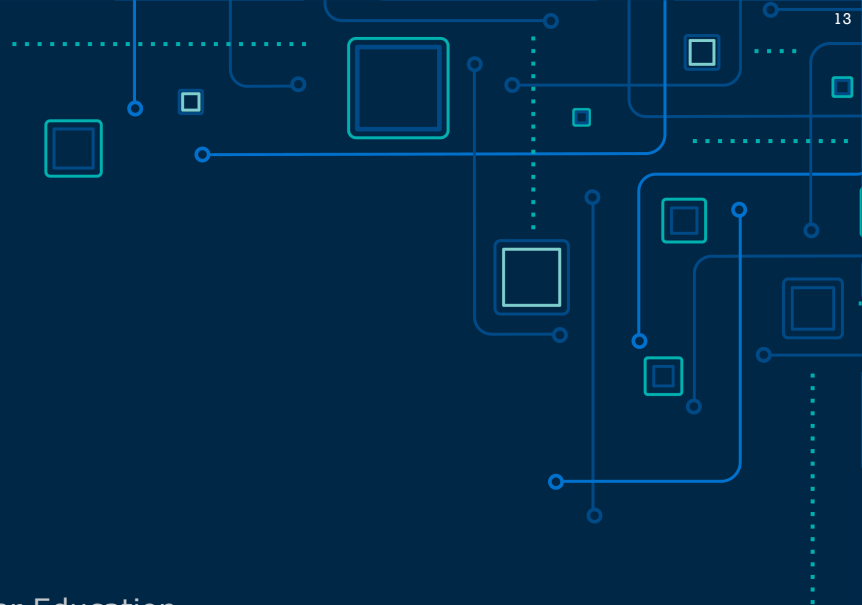Career center staff educate students on the use of AI in the job recruitment process

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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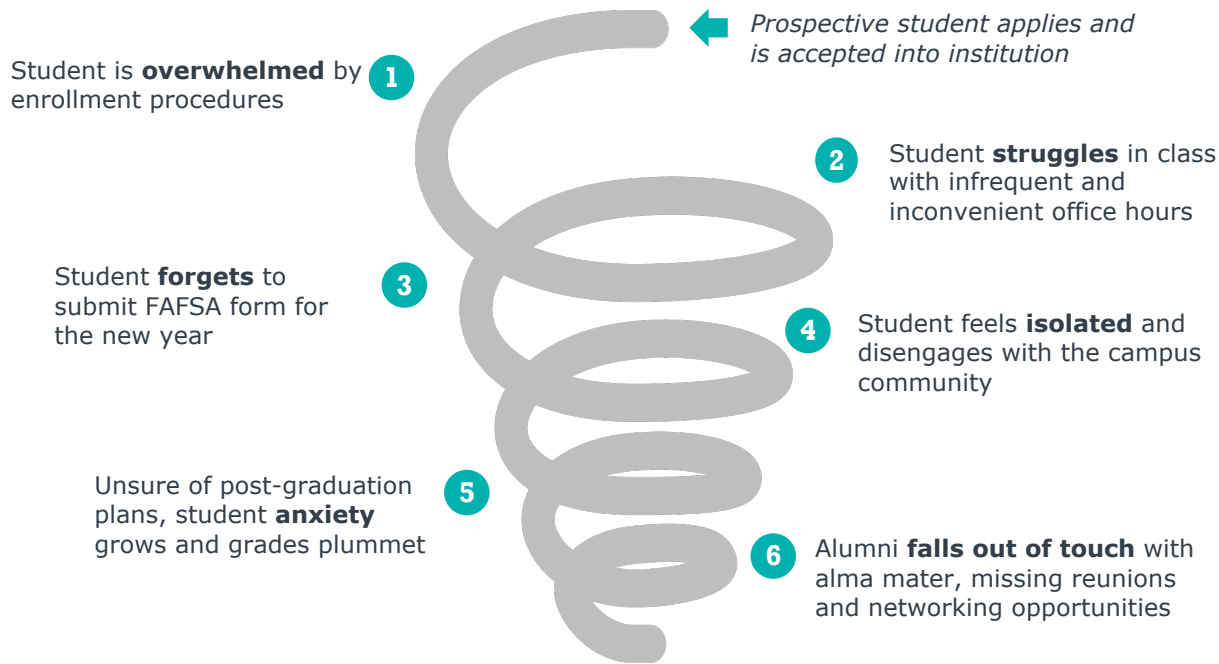
TRANSFORMATIVE OPPORTUNITY

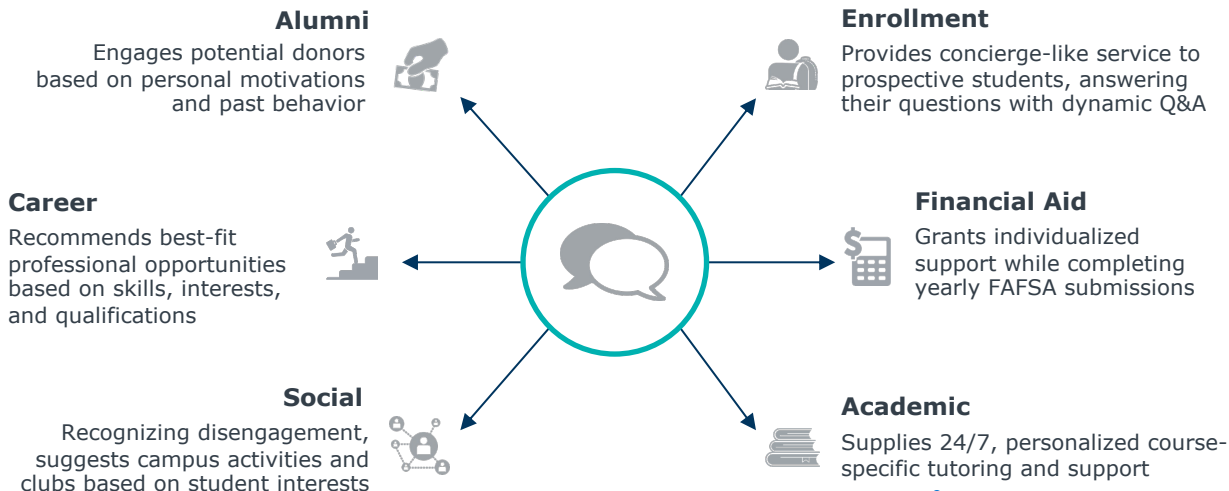## Provide 24/7, Personalized Student Support with One-Step Conversational AI

2

Service Pitfalls Throughout the Student Lifecycle

Prospective student applies and is accepted into institution

1 Student is **overwhelmed** by enrollment procedures

2 Student **struggles** in class with infrequent and inconvenient office hours

3 Student **forgets** to submit FAFSA form for the new year

4 Student feels **isolated** and disengages with the campus community

5 Unsure of post-graduation plans, student **anxiety** grows and grades plummet

6 Alumni **falls out of touch** with alma mater, missing reunions and networking opportunities

How One-Stop Conversational AI Preempts Common Service Pitfalls

Alumni
Engages potential donors based on personal motivations and past behavior

Enrollment
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 individualized support while completing yearly FAFSA submissions

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

Academic
Supplies 24/7, personalized course-specific tutoring and support
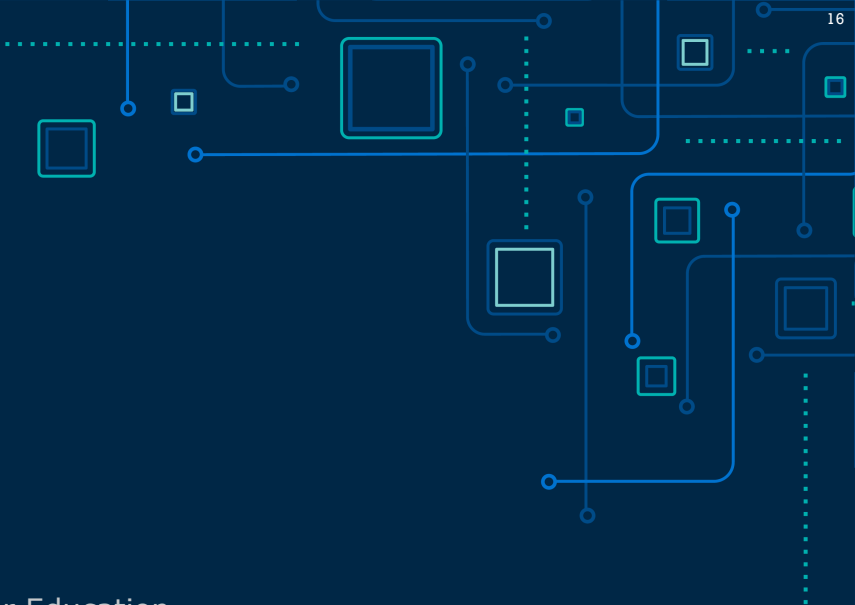
A New Era of Personalized Learning

▶ **Khanmigo, AI Tutor and Assistant**

Khan Academy trained Khanmigo on its platform's data to assist students on tasks from writing papers to coding software

▶ **Jill Watson, AI Teaching Assistant**

Georgia Tech integrated generative AI into its existing Jill model, reducing training time from 100 hours to 10 hours per class

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Supercharge Faculty 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.

Teaching & Learning

Faculty

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 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**
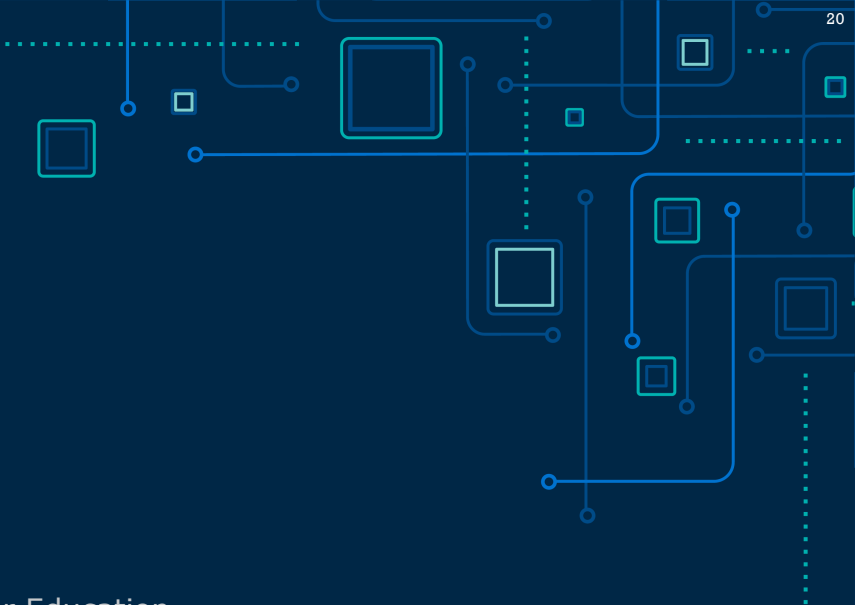
Big Bets to Replace Staff

Registrar

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

Enrollment 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.

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Maximize Enrollment and Advancement Yield with Hyper Personalized Content Generation

Use AI to Hyper Personalize 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
- Customized messages based on past donor behavior and written in the voice and tone of the giving team

Highest number of Giving Day donors in 6 years

2K First-time donors

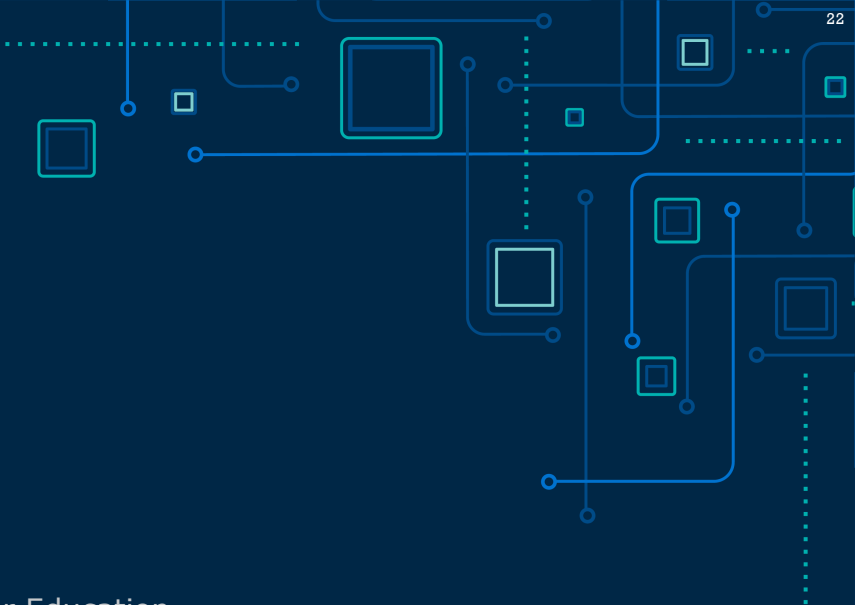**2 Fiscal Year-End Appeals in the Dean's Voice**

- 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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TRANSFORMATIVE OPPORTUNITY

5

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

The AI Research Gold Rush Begins

AI Redefines What is Possible in Research...

▶ **Protein Design**

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**

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**

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 Syamanth, "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.

Charting a Path Forward With AI

Top-Of-Mind Questions for University Leaders Across Strategic Priorities

President

- Where do we need to invest and how soon?
- Where are the risks I need to be aware of and mitigate?
- Who's moving the fastest, who are the leaders in the AI space?
- How can AI augment our ability to reach best-fit students, world-class faculty, and research dollars?
- What impact will AI have on our campus culture? How can we preserve our high-touch culture?

Provosts

- How can AI help free up faculty and staff time so they can focus more on supporting students, especially considering post-pandemic mental health concerns?
- How do we adapt our curriculum and prepare our faculty across disciplines?
- How can we deploy AI to help us proactively manage our program portfolio and effectively intervene to support at-risk students?

Chief Business Officers

- What AI solutions have the most transformative potential to drive operational efficiency?
- How should we be thinking about investments in generative AI capabilities?
- How can we use AI to improve persistence and predictability of net tuition revenue?
- Can we use AI to do the work of hard-to-fill, expensive roles?

Chief Information Officers

- How should we integrate AI into operations: leverage vendor products with AI features, use OpenAI API, or self-host open-source models?
- How will AI impact our cybersecurity and privacy risk environment?
- What foundational elements do we need (e.g., staffing, data, storage) to support AI innovation?

Source: EAB interviews and analysis.

Top-Of-Mind Questions for University Leaders Across Strategic Priorities

Enrollment Teams

- How will AI disrupt what students and prospects expect from us? And what's the timeline for these disruptions?

- What is the risk of not embracing AI from a competitive lens?

- What does responsible use of AI in enrollment functions (e.g., marketing, admissions, financial aid) look like?

Student Success Teams

- How will AI impact the classroom experience and student employability?

- Where should we invest/what AI solutions have the most transformative potential to help our students?

- In what ways can AI help us more proactively and effectively intervene to support at-risk students?

- How do we prepare students to employ AI tools while contending with its hallucinations and biases?

Data Management Teams

- Can AI improve the management, integration, and utilization of vast amounts of educational data?

- How will the emergence of AI require us to rethink fundamental data management models (e.g., governance structures, storage)?

- How can AI help us transform raw data into actionable insights to support decision-making at all levels?

Risk Management Teams

- What will AI's regulatory landscape look like in the coming months/years? How do we prepare?

- What steps can we take to mitigate the cybersecurity and privacy risks associated with AI?

- How do we adequately vet vendors incorporating AI to maintain our security posture?

- Can we be held liable for any inaccurate/harmful responses AI tools might produce?

Source: EAB interviews and analysis.

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