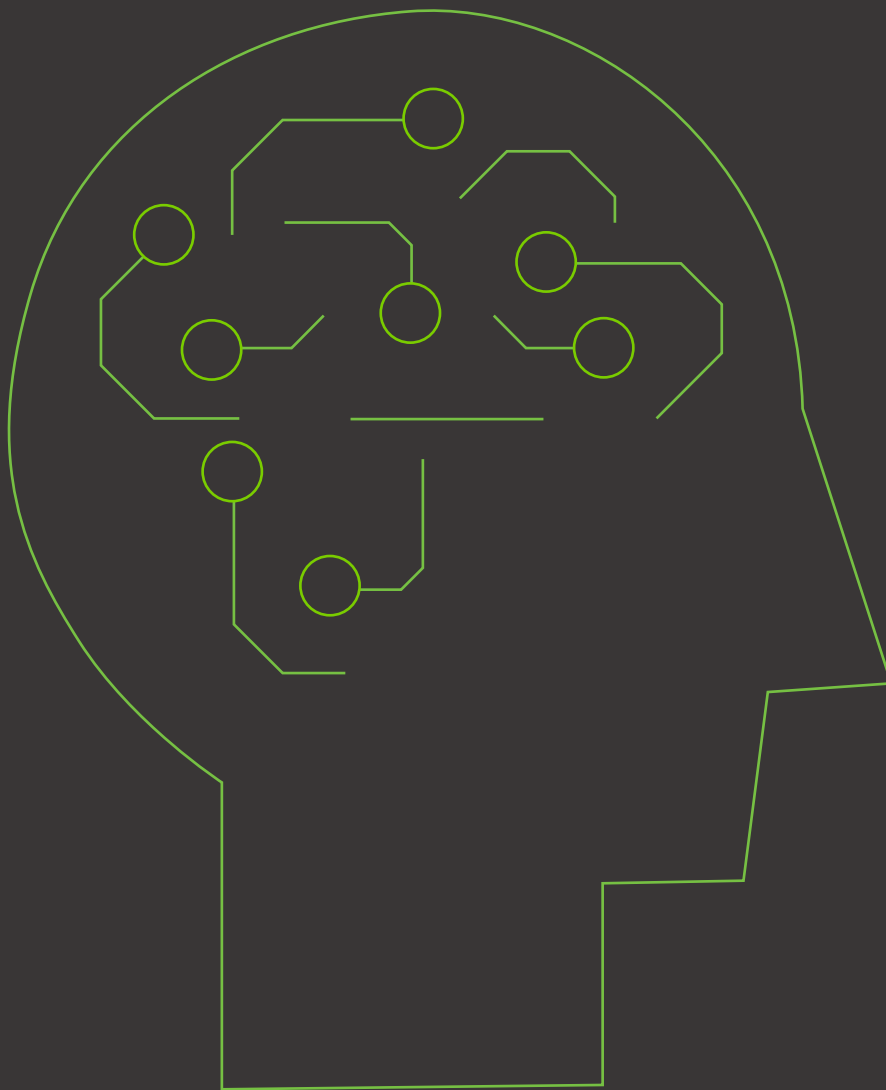


AI in Business Education

Gies College of Business
University of Illinois Urbana-Champaign



GMAC's AI in Business Education case study series spotlights the integration of artificial intelligence in graduate management education, focusing on curriculum development, administrative processes, and strategic applications.

University of Illinois Urbana-Champaign and the Gies College of Business are creating waves in the business school community both in the growth of their programs but also in their disruptive approach to higher education. The institution has served over 4 million learners across the world with their massive open online courses (MOOC), and the online iMBA became the fastest growing MBA worldwide with a peak enrollment of 5,435 students in 2022—making it one of the largest MBA programs in the United States. In particular, their efforts to embrace generative artificial intelligence (GenAI) and the ability to leverage unique university resources, such as the University of Illinois' National Center for Supercomputing Applications, has made them a standout institution in the business school sector.

In early 2023, following the breakthrough of a new generation of GenAI tools, the University of Illinois saw the need not just to make use of the new tools but to have a coordinated and supportive approach to making the most out of the new software. The institution founded the Generative AI Solutions Hub to foster collaboration and innovation across the various schools at the university. The hub's remit was to explore AI use cases in research, teaching and learning, and administration, as well as play a key role in sharing best practices, organizing training and support, providing information and resources, and identifying successful AI implementations for a broader development and rollout across the institution.

As a result, the University of Illinois was able to establish a supportive and entrepreneurial culture with AI, which encouraged faculty and staff at Gies and across the university to experiment with new technologies and test many different ideas and use cases. In many instances, this resulted in several different, competing approaches and technologies to solve similar problems, which allowed the university to identify the most successful outcome based on user experience and feedback. The most prominent of these examples is the twin development of automated platforms for setting up AI teaching assistants for any module based on existing materials.

A summary of success

The Context:

A decentralized and entrepreneurial strategy across university schools that encourages diverse exploration and innovative use cases—and consequently helps discover the best solutions for different contexts.

The Innovation:

The University of Illinois and Gies College of Business established a support framework that fostered experimentation with a variety of existing and custom designed GenAI tools among different schools and faculty. This spotlight focuses on two GenAI-based Teaching Assistants that were developed concurrently, including how business school faculty could compare the projects and identify the best solution for them.



“Our mission is to prepare students for a world that’s evolving rapidly. We encourage faculty to try new things and explore AI in their teaching. We’ve experimented with digital avatars, AI-written essays, and integrating AI into course content. We believe in staying ahead of the curve and empowering both staff and students to adapt. The goal is to foster innovation, not just in teaching, but in how we operate as a college.”

Robert Brunner
Associate Dean for Innovation & Chief Disruption Officer

Strategy and planning

The challenge faced by the teams at Gies and the University of Illinois—like many institutions—was how to become an early adopter of a new technology in its initial stages of development with few proven use cases. The technology is still fast moving, and many problems are still to be solved. Likewise, the risk of investing heavily in a single flagship project with the potential to fail through many known or unknown risks posed a challenge. By taking advantage of the decentralized environment at the University of Illinois, the institution was able to encourage a range of projects to begin tackling a variety of localized opportunities, while supporting and monitoring the developments through the university-wide GenAI Solutions Hub. At the same time, the hub connected experts, built a community, coordinated resources, and advised campus leadership on how to support the advancement of GenAI at Gies and other schools at the university.

By taking an approach of supporting from a distance while encouraging experimentation, the institution accepted the possibility of the emergence of different solutions to similar challenges. Rather than prevent this in the early stages of development, the teams at the business school and broader university embraced the diversity of solutions as an opportunity to refine the tools and help them find their niche within different contexts. Having competing solutions was a strategic decision that encouraged variability and experimentation. The institution saw the competition as healthy, since it allowed for more diverse functionality and the opportunity to discover which approach worked best in various contexts. Rather than adopting a specific solution or platform at an early stage or even after a pilot phase, transparency and flexibility were given to faculty—allowing for the choice of the tool that best fits their needs.

The two projects highlighted in this spotlight both tackled the challenge of GenAI-based teaching assistants. The aim was not just to build a custom generative pre-trained transformer (GPT) trained on a specific set of teaching materials for an individual module or course, but rather to build a framework and interface that allowed for any faculty member to create unaided their own customized teaching assistant trained on their unique set of teaching materials and learning resources.

Both solutions adopted similar approaches to the development with features addressing key requirements of faculty users. However, the result was two unique options for GenAI teaching assistants, available for free to all internal faculty, but each with its own strengths and focus features.



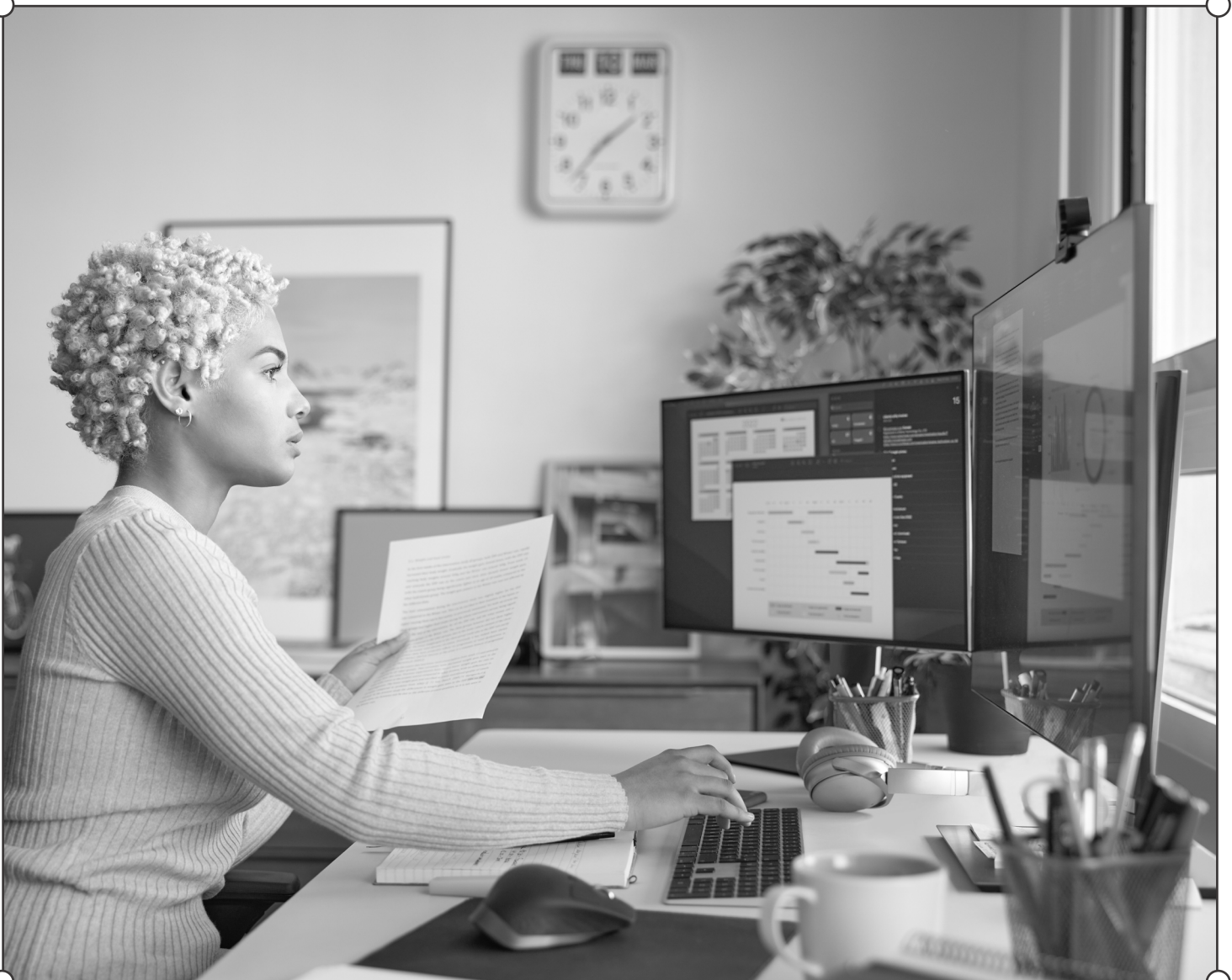
“We created ‘Illinois Chat’ to address the growing demand for instant student support, particularly during peak times like before deadlines. The goal was to provide an AI teaching assistant that could handle questions about lectures, assignments, and course materials, especially when teaching assistants and professors were unavailable.”

Kastan Day
Research Software Engineer, National Center for
Supercomputing Applications

Framing the project

Faculty are constantly creating new courses, updating existing curricula, adding new reading materials, data, media resources, and publishing new research. The knowledge and experience to piece together all of these resources when answering questions and supporting student discussions lies solely with the professor who created the course. So imagine the time required for the same faculty member to not just answer questions from proactive students but to take the time to interact and monitor the engagement of less active students.

When faced with the question of how to provide an AI teaching assistant for the increasing number of online students and growing classes at the university, two independent initiatives approached the problem from a single angle. Not just to build a single use AI assistant for a specific body of research, but to provide a simple-to-use platform that allows even the most time-constrained faculty member to safely upload any format of data and teaching resource and instantly provide their students with a module-specific, up-to-date AI teaching assistant integrated with their Learning Management System (LMS).



AI implementation

AristAI

The first tool to go live was developed by a faculty team under the guidance of computer science professor Tony Zhang. AristAI is already available internally and is planned to be rolled out as a commercial venture for external faculty and institutions. To ensure privacy, the tool was built using a private, open-source LLM so that any data uploaded remains secure on the AristAI server; however, the solution also uses public, closed-loop LLMs in delivery. The tool is designed with simplicity for faculty in mind and ease of use and accessibility for students. AristAI uses a multimodal processing technique so that faculty are able to upload their materials in any format including videos, webpages, handwritten notes, and even complex documents containing excel data and equations. The tool interacts seamlessly with the different Learning Management Systems both to retrieve program information and to interact with students. The tool also provides detailed real-time analytics on student behavior and learning patterns to enable faculty to adapt their teaching strategies. In particular, AristAI has invested significant development time in accessibility options so learners with disabilities are able to interact with the content.

Illinois Chat

The second tool has been developed by the University of Illinois' National Center for Supercomputing Applications (NCSA) and is being rolled out in Fall 2024. The tool was originally built using Google T5 models before switching to OpenAI's GPT4-mini. It is hosted on the NCSA servers and is currently accessed by students through a standalone website. The tool is being integrated with the Canvas LMS to access course materials, allowing faculty members to simply add the bot as a student to their course to access and scrape all of the content that is visible to students. A key strength of the tool is its customizability for faculty needs.



Challenges and solutions

1. Privacy and security

Both tools faced concerns of privacy of data and protection of learning materials resulting in different LLMs being deployed on local servers. In both cases, the solution provided the reassurance needed for both individual faculty and the institution to ensure a successful rollout and growth of the user base.

2. LMS integration

The University of Illinois uses several Learning Management Systems, including Canvas, Moodle, and Coursera. This presents a significant challenge integrating with the platforms for the retrieval of course materials and interaction with learners. The two tools took divergent paths at this point, with AristAI integrating with the different LMS to retrieve learning materials and providing an interface to interact directly with the students through Canvas. By comparison, Illinois Chat avoided the complication of full integration by remaining with an independent web interface for student interaction.



“The school has a supportive culture, encouraging faculty and staff to experiment with AI technologies. I started small, building bots for classroom activities on platforms like Discord, and it grew from there. Now we have larger initiatives like ‘Illinois Chat,’ which allows instructors to create virtual TA-level chatbots for their courses. This project is expanding, with grants supporting research on AI’s effectiveness in learning environments. The college’s openness to innovation has made it possible to explore AI in both teaching and administration, fostering a rich environment for experimentation and growth.”

Vishal Sachdev
Clinical Associate Professor & Academic Director –
M.S. Business Analytics



The future of AI at Gies

Embracing the entrepreneurial spirit at the University of Illinois has already seen a number of successful pilots and full rollouts of GenAI solutions. In addition to Illinois Chat and AristAI, Gies College of Business has begun to use GenAI in the delivery of online courses—with professors replaced by video avatars using Synthesia, script generation partly supported by ChatGPT, and voices synthesized by ElevenLabs. A single professor is able to now offer online courses in languages that the professor can't speak, with the ability to update and generate new versions of courses faster than ever before. The first of the new courses is going live on Coursera in January featuring Professor Robert Brunner—and the result is very convincing.

The new dean at Gies College of Business, W. Brooke Elliott, has big plans for the business school. The school's goal of expanding access to education and the ability to deliver high-quality education at scale using new technology is at the core of the strategy both for on-campus and online students. The cross-school collaborative approach embodied by the Generative AI Solutions Hub provides a clear foundation for the institution's future strategy. The various working groups have identified a range of future use-cases across research, teaching, and learning—as well as university operations that focus on efforts like greater personalization of learning and assessment; integration into course development with the rollout of multilingual digital avatars to support lecturers; and AI-enhanced peer reviews and feedback. In particular, the institution sees an important role of AI-assisted teaching and learning in the Global South, where many learners have limited resources to pursue quality higher education but have access to a smart phone. There is an opportunity to create educational pathways in the user's native language, with high quality and trusted content, personalized support and delivery, at an affordable price for anyone with a smart phone and internet service.



“We’re pushing toward AI integration across many areas at Gies, focusing on personalized and dynamic learning experiences. AI-driven digital avatars will deliver lectures and answer student questions in real-time, transforming student engagement. We’re also expanding AI in assessments, offering personalized exams and feedback tailored to each student. The Generative AI Solutions Hub is fostering cross-campus collaboration to explore new use cases in teaching and research. Additionally, AI will be used to improve operational excellence, streamlining administrative processes, with a significant impact expected over the next 18 months.”

Tawnya Means
Assistant Dean for Educational Innovation

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