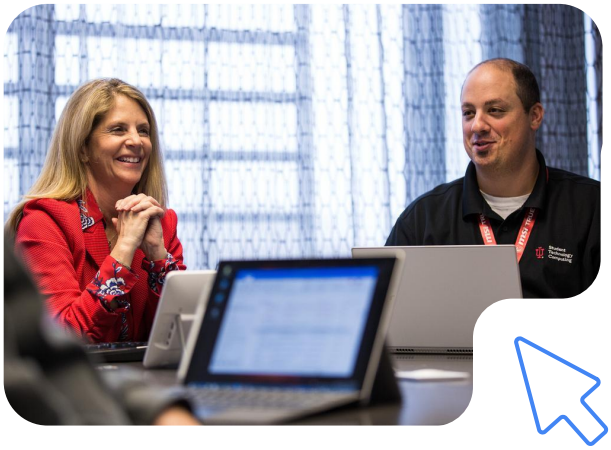
CHRONICLE STUDIO | Google for Education

How a maturing AI industry is changing college campuses

Higher-ed institutions are turning to AI to support core administrative initiatives, accelerate innovative research.



Background

Artificial intelligence is quickly changing how colleges and universities operate.

It's streamlining administrative tasks, enhancing research capabilities, and even acting as an assistant for educators and students alike. This shift promises to make higher education more personalized, accessible, and effective.

As AI takes on routine tasks and data analysis, it frees educators and administrators to focus on what matters most: Meaningful interactions with students, innovative teaching methods, improved ways of learning for students, and groundbreaking research.

Supporting College Advisors at Scale

- Academic advisors spend a lot of time sorting through faculty and course availability to match students' academic demands and requirements
- Database silos between different colleges at UC-Riverside adds further complexity
- Gemini AI is helping to synthesize and analyze all these data points to make it easier for advisors to plan each student's academic journey

Expediting Tasks Within Admissions

- Admissions officers spent hours manually uploading photos and entering application form information onto their system
- DocumentAI is easing speeding up the process through automation

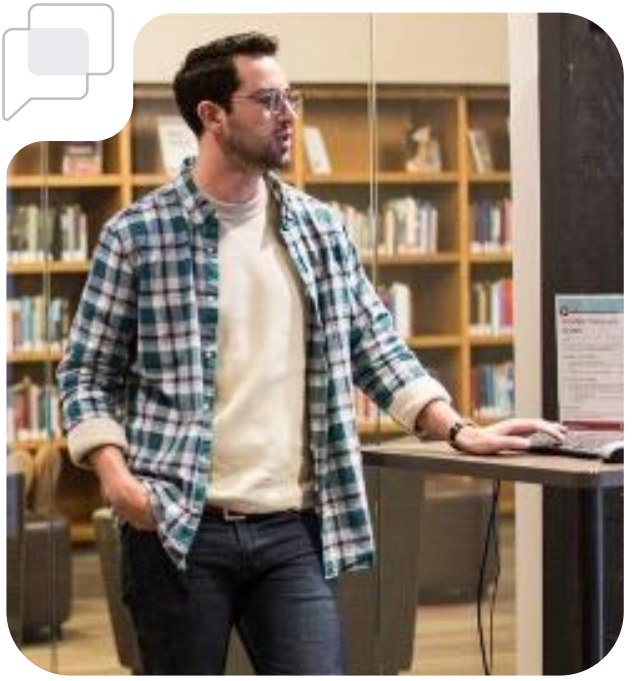
Enhancing administrative tasks and services

Every student who crosses Pierce Lawn to visit their advisor's office at the University of California at Riverside has different needs and goals.

Advisors spend a lot of time triangulating nuanced differences between the availability of professors and courses and a student's majors, minors, and extracurriculars to come up with a bespoke class schedule.

"So, we're building an AI service that helps answer those questions for the advisors," said Matthew Gunkel, Chief Information Officer at UC-Riverside.

He leans in excitedly as he explains how all of the information about what classrooms are available at what times, and which professors are teaching what courses this semester changes constantly. What's more, that information all lives in different databases within different colleges.



It takes time for advisors to hunt through all of that. But using Gemini, along with internal data, Gunkel and his team are working to synthesize and analyze all of that data in an instant.

"If they can just start to lean into that service, then they are able to provide the actual human support students need to continue confidently on their learning journey," Gunkel said.

Other AI projects at UC-Riverside have been smaller, though no less profound in their time savings. Gunkel's team used a Google service called DocumentAI to build an AI layer that allowed the admissions team to upload photos and autofill application forms.

Before, that process took a lot of code and a lot of time. Now, it's just a few lines of information and the forms are ready to go.

A day's drive up I-5, President Cynthia Teniente-Mason's administrative staff at San Jose State University (SJSU) are using AI to query spreadsheets to gauge where admissions stand for the fall semester, connecting students to financial aid services, or sorting through email threads to automatically find the information they need on a project.

San Jose State University (SJSU)

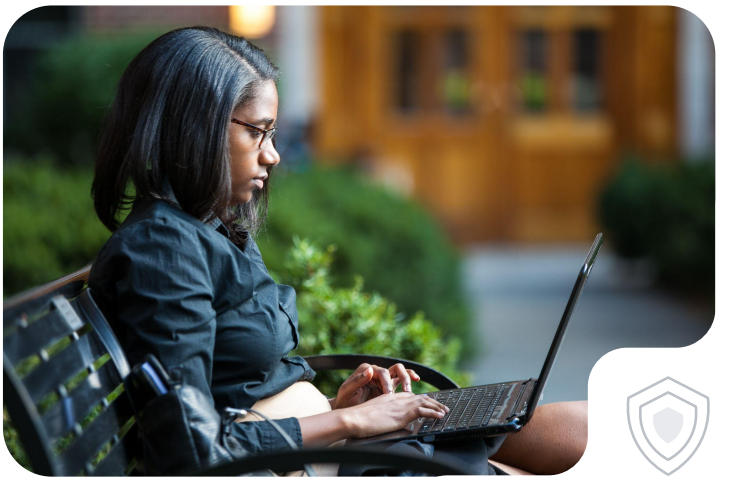
Assisting Administrative Projects

- Administrative staff at SJSU spend a lot of time sorting through institutional data to support university objectives
- AI is assisting staff to advance key projects, including querying spreadsheets to gain accurate measures of admissions numbers and connecting students to financial aid

Exploring AI Use Cases Across Campus

- AI lab at SJSU is an advisory group to define the various use cases for AI across students affairs, marketing and communications, executive offices, instructional support, and IT

> We're still learning. Gemini has been a great thinking partner. It helps me manage tasks and do certain things faster than I could before so I can be more productive."
>
> **Cynthia Teniente-Mason,**
> San Jose State University, President



Last year, SJSU gathered about 100 staff from student affairs, marketing and communications, executive offices, instructional support teams, and IT to start defining use cases and performance measures for artificial intelligence.

Based on that work, the campus formed an AI advisory group, built out an AI lab at the SJSU King Library, and hired staff to help coordinate the various AI projects cropping up around campus.

Teniente-Mason regularly uses AI, like Gemini, to write first drafts of speeches, answer emails, and summarize massive reports.

Focusing LLMs to your textbook

It has historically been impossible to tell exactly where a language model got its information in the first place. You can't fact check it, or track the provenance of its ideas. And while general-purpose AI models may possess general knowledge about the world, they understandably lack any information about your own specific projects — whether that's your notes, team documents, specialist research, or other documentation.

But new AI-powered applications like Google's Gemini and NotebookLM offer a solution to these problems: Source grounding.

Grounding connects an AI model to a set of sources like textbooks, presentation slides, websites, lecture videos, class notes, and more — anchoring the model's responses to accurate, factual information.

NotebookLM even features inline citations that take you directly back to the original passages that inspired each fact or idea that the model includes in its response.

Steven Johnson, Editorial Director of NotebookLM, demonstrated the power of this grounding technique within NotebookLM using Gemini.

He pulled up a workspace that included sources on American history, then asked NotebookLM to create a study guide for chapter two of a particular textbook.

The AI returned a short-answer quiz complete with an answer key that a student could use to test their knowledge, a set of five suggested essay questions to practice writing out their thoughts about the chapter, and a glossary of key terms mentioned in
the material.

When Johnson asked follow-up questions in the chat, the AI eturned detailed answers with inline citations linking to the relevant original passages, giving students the capability to read more context and to verify that the information is accurate.

"So I can ask questions, I can get answers, but I always know where the information came from," Johnson explained. "It's almost like a research assistant."

Other prompts produced suggested passages from approved materials for a student to learn more about different topics, or key quotes from the text.

Professors can flip this approach on its head and use these same tools and materials to create lesson plans, quizzes, or class projects, Johnson added. If they add sources like curriculum standards or other guidelines, the AI will create lesson plans that conform to those standards and, again, include citation links that show how each part of the plan aligns with the guidelines

Google for Education

That just opens up so many opportunities for how we as a society can support higher education for those populations, support their learning, and help manage their environments so they can be even more successful."

Steven Butschi,
Google for Education, Director

Unlocking new data sets for researchers

For R1 institutions, research is an important part of both the university's revenue structure and its prestige. Here, too, AI is opening new opportunities in higher education.

Steven Butschi, Director at Google for Education, said many researchers are using tools like Gemini for Google Workspace to help write, review, and refine grant proposals. However, he's found the most interesting use cases have come from incorporating AI into the research process itself.

As one example, he pointed to the University of California at Davis, where health researchers are looking into how things like access to transportation, education, socioeconomic factors, and other social determinants affect health outcomes.

Much of that data is unstructured, which means it is buried in PDFs, JPGs, or other hard-to-parse formats that defeat most automated ways of collecting information.

AI, however, can ingest and analyze unstructured data.

Building a second assistant with AI

As AI evolves, colleges and universities can expand use cases — from administrative teams to inside classrooms and labs.

AI tools will continue to make life easier for administrators, faculty, students, and researchers alike, Johnson predicted. He offered his own work as an example. He has more than 8,000 quotes from interviews he's conducted for his books over the last 20 years, he explained.

There's reams of knowledge he's learned and forgotten. But thanks to AI, that's no problem.

"I can have these conversations, brainstorming sessions — whatever you'd like to call them — with an AI that is, effectively, an expert in everything I've published and in all the important ideas that I've read. I now have an assistant that remembers stuff much better than I do and has the ability to make new connections and associations between things."

As AI experts continue to hone large language models and other tools, higher-ed institutions will find more roles for AI within their administrative workflows, in the classroom, and in the lab.

By embracing these technologies thoughtfully and ethically, institutions can enhance their ability to educate, innovate, and prepare students for a world where AI is an integral part of both personal and professional life.

UC-Riverside, SJSU

Key Takeaways

- Explore opportunities to automate data-heavy tasks
- Bridge institutional knowledge silos to improve (and use) insights
- Collaborate across disciplines to discover potential AI use cases

Discover How AI Can Impact Innovation on Campus →