Lehigh University: Scaling AI Education and Operations with Google Gemini and Internet2 NET+

Through Internet2's NET+ program, Lehigh University in Pennsylvania is expanding its use of artificial intelligence (AI) tools to enhance teaching, streamline operations, and prepare students for their future careers. By leveraging Google AI, faculty, staff, and students are integrating AI agents and platforms into their classrooms, research, and administrative workflows.

The Challenge

Lehigh University, a long-standing Google Workspace institution, recently adopted Google's AI offerings through Internet2 NET+, including Gemini, NotebookLM, and AI Pro. After testing LLM platforms available from other major providers, the university found licensing and cost models difficult to scale equitably.

"The challenge with many popular AI vendors was that the pricing models weren't scalable," said Jim Monek, Lehigh's director of Technology Infrastructure & Operations with Library and Technology Services. "We didn't want to tell students, faculty, and staff to use free versions because we couldn't control security. Google was available, included in what we already purchased through Internet2 NET+, and the direction was clear for our community."

Internet2 and NET+ provided critical support in making the partnership possible and accelerating adoption. "Through NET+, we've leveraged the community to collaborate with others on how to deploy the technology," Monek explained. "With rapidly changing AI technology, meeting on a regular basis has been of tremendous value to us. In the AI space, Internet2 has a working group, and we've learned tons by working and sharing experiences with other institutions."

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Strategy in Action: Training and Responsible Use

Lehigh's Google AI rollout strategy emphasizes training and responsible use. The university Provost's office has partnered with faculty to create Gemini Gems, custom AI agents built around specific courses. These agents go beyond providing direct

answers – they guide students to ask questions and engage more deeply with material. "We can bring in the syllabus and other course materials to a Gem and give it specialized instructions that are specific to the course that will, for example, guide students to ask questions instead of just providing answers," Monek said. "This becomes a powerful tutoring system."

Faculty have begun piloting these Gems while some departments simultaneously use sandbox chatbots for classroom exploration. First-year students have an opportunity to get introduced to AI using NotebookLM through Lehigh's 5x10 program, which helps them organize, study, and interact with course materials.

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Training is multi-layered and extends from monthly office hours and campus-wide seminars to our Strategic Methods for AI-Responsive Teaching (SMART) Community of Practice. Demand is particularly high for prompt engineering workshops, which Monek described as "a skill we think everyone needs to have." In addition to these support systems, Lehigh is rolling out an AI-Readiness Promise to its students that will include guided AI Learning Pathways for general knowledge and skill building, AI-intensive courses for discipline-specific AI fluency, and department-driven AI projects for hands-on practical applications.

Early Impact

Early AI applications are already visible across campus:

- **Teaching and Learning**
  Lehigh found that faculty-developed Gems and sandbox bots encourage inquiry-based learning, while NotebookLM helps students structure coursework.
- **Administrative Processes**
  During this study, Monek has proposed an AI agent to summarize technical and security contract reviews, which are typically lengthy. "My idea came from a NET+ session where someone in their legal department was using the AI agent to summarize technical contracts," Monek said. The University has also recently solicited proposals from administrative units across campus that see an opportunity for AI adoption in their area but need some additional guidance, tools, and support.
- **Creative Applications**
  At Lehigh University, the athletics staff utilized AI for purposes beyond the classroom and administrative tasks. Staff in athletics generated artwork for alumni outreach, saving time compared to manual editing.
- **Branding and Communications**
  AI implementation extends to Lehigh University's communications office. Staff there are developing an AI agent trained on new branding guidelines to assist communications-focused staff across campus, assisting with messaging for students, parents, and alumni.

According to Monek, these use cases demonstrate a cultural shift. "We've moved beyond the basics of AI. We're becoming more interactive and open with the sharing of ideas on how to effectively use AI tools."

Navigating the Hurdles: Security, Metrics, and Integration

Despite early success, Lehigh remains proactively engaged and focused on improvement in:

- **Privacy and Security**
  "Privacy guidance remains an area where we need more clarity," Monek noted. "We're not clear on what data of ours is being used. In every session, we emphasize data classifications about what information can and cannot be put into these models. However, faculty and staff continue to report uncertainty about appropriate usage in the specific cases they face."

- **Metrics**
  Faculty and administrators are eager for more reporting on usage. "One thing that comes up a lot — and I'm very security and privacy focused — is getting metrics about AI use. Faculty and staff want to see concrete evidence of how much students are interacting with Gems."

- **Licensing and Integration**
  Integrating AI with Lehigh's Moodle learning management system is another hurdle our campus has to overcome. As Google rebrands and renames its services, updating documentation and ensuring the right users have the necessary licenses has proven complex.

Results: Efficiency Gains and Cultural Shift

Although still in the early stages of deployment, Lehigh University is already experiencing efficiency gains and cost savings. By building custom AI agents in-house rather than purchasing commercial solutions, the university has avoided significant expenses.

Monek also pointed to cultural benefits: "There was controversy around Google search in higher education when Google first launched; now the same feelings of skepticism and controversy are associated with AI. Some faculty, staff, and students won't touch AI, while others are embracing it."

Through Internet2 NET+ and Google AI, Lehigh University is positioning itself as a model for integrating AI into higher education in a responsible, equitable, and creative manner.

The Future of AI on Lehigh's Campus

Lehigh University has ambitious plans to expand. The university has joined the Google AI for Education Accelerator Program to provide students access to AI Pro and is actively promoting AI training led by students who train their peers. Annual faculty summits and the Future Maker Grant program will generate new proposals for AI use cases, from teaching innovation to ensuring operational efficiencies.

"It's always going to be about price, but also security and putting guardrails around protecting data," Monek said. "Sharing agents is a major concern now that Gemini Gem sharing is possible."

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