Buffalo Next: Empire AI ready for supercomputing leap

Matt Glynn   19 hrs ago   💬 0

Hochul at UB

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ov. Kathy Hochul talks about the Empire AI Consortium at UB's Center for Computational Research, on Oct. 11, 2024.

Empire AI ready for supercomputing leap

The University at Buffalo plans to break ground this fall on an Empire AI supercomputing center on its North Campus.

Once it's up and running, the facility will be a focal point of the state's Empire AI initiative.

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The future site of the Empire AI center on the University of Buffalo North Campus on Friday, Feb. 20, 2026. (Joshua Bessex/News file photo)
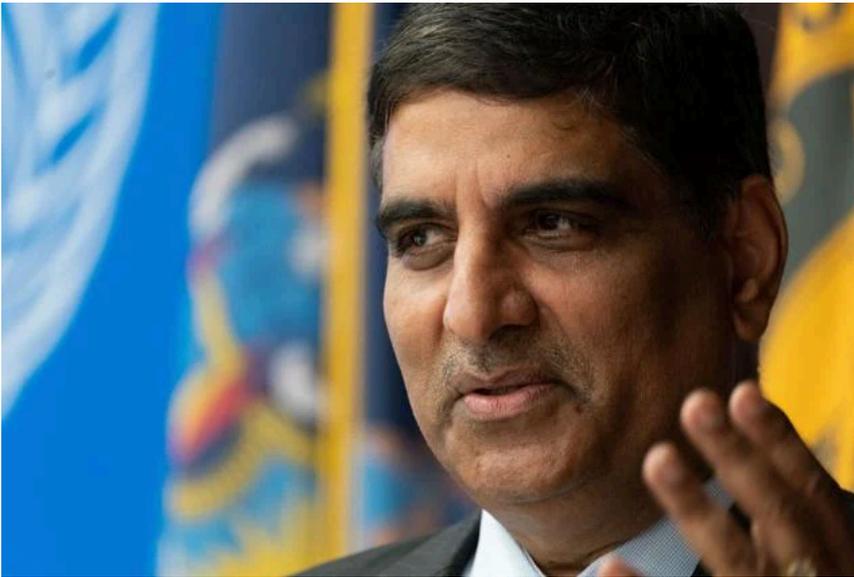
Joshua Bessex

Empire AI is a research consortium of higher education and private research institutions from around the state. UB is the home of its hub, and others are noticing, as Venu Gonvindaraju discovered on a recent recruiting trip to India on behalf of the university.

"I'm telling you, Empire AI is the biggest draw, because that's how they take the news," said Govindaraju, UB's senior vice president for research, innovation and economic development. "AI is happening, Empire AI is in New York, and Buffalo is the home."

Competition among U.S. universities for international students has become more intense, amid the current political climate and the U.S. issuing fewer student visas.

As UB tries to attract more international students, UB's connection to Empire AI helps the university stand out, Govindaraju said.

Similarly, faculty members are being drawn to UB's new Department of AI and Society, he said.

"I think it is making a huge difference, " Govindaraju said.

Empire AI's "alpha" system launched in 2024 at UB's downtown campus. UB is preparing to install equipment for Empire AI's "beta" system, which will have computing power 11 times more powerful than alpha's.

"The way to look at it is, if you are a scientist, and your job was going to take two days before, now it will be like couple of hours," Govindaraju said. "Your job was going to take a month, (now) it's like a few days.

"So, it just completely accelerates the whole process and keeps the momentum" going on research projects, he said.

UB says researchers are using the turbocharged computing power to develop technology for projects including those designed to ease the nation's shortage of mental health professionals, improve medical imaging and help people with motor neuron diseases such as ALS.

Since Empire AI is a consortium, UB shares access to the systems with other partners, who are carrying out projects of their own.

Empire AI has grown into a $500 million initiative, a combination of public and private funding.

"What the governor has allowed us to do with Empire AI is unleashing these whole possibilities, for curiosity-driven research, for the public good," Govindaraju said. "This is not very easy to emulate, by the way, because you need the political will, and you need the funding, and you need the critical mass of universities, and so on. We are so fortunate."

Next comes the "gamma" system, the permanent center planned for North Campus. The Empire AI equipment from the downtown facility will be moved there.

The new supercomputing center is expected to be operational in 2028, said Kiran Keshav, director of research computing at Empire AI.

"We are, right now, at the latest and greatest when we released beta," Keshav said. "So, we are leaving it open to see what's going to come with that gamma data center buildout and what technologies we'll have to work with that at that time, as it relates to the computing and storage platform."

Keshav said Empire AI is making available to researchers the types of resources that used to be accessible by only a few large tech companies, because universities on their own couldn't afford them. Those limitations had the potential to leave academic researchers waiting in line or having to scale back their ideas in areas such as health, climate or infrastructure, he said.

As powerful as the beta system will be compared to alpha, the gamma system will represent another huge leap in supercomputing power, Govindaraju said.

"It's only left to our imagination that what the next wave of technology will be like," he said.

And he sees potential for spinoff development from research, by companies that want to have locations near the facility.

"I think it will be a cascading effect in an indirect way, that you want to be close to where the action is," Govindaraju said. "And again, the cascading effect is more faculty members are coming here for Empire AI, more students are coming here, talented ones.

"With this kind of training, how many students are graduating from other universities who will have hands-on training with these kinds of machines?" he said.

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