

# Pittsburgh Post-Gazette®

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## CMU opens first AI maker space to let students ‘sharpen the cutting edge of AI’

# A PLACE FOR INNOVATION

By Lauren Rosenblatt  
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With visions of a robot playground, an obstacle course for drones and a “smart” kitchen, Carnegie Mellon University opened its first “maker space” for artificial intelligence.

The idea of a maker space isn’t anything new – they are often used as a place for students, researchers, entrepreneurs or tinkerers to experiment with different materials and technologies. But at CMU, they had been found mostly in the engineering department or with a focus on hardware.

On Wednesday, the university unveiled what it believes to be the first maker space devoted to software.

Robots are still there – there are already more than 40 in the 2,000 square foot facility – but the research done in the space will focus on things like computer vision, speech recognition and artificial intelligence.

“By putting critical AI tools directly into the hands of CMU students and researchers at the forefront of innovation, the [maker space] will empower our students to become the next generation



Carnegie Mellon University photos  
Robotics Institute Ph.D. student Kevin Zhang, left, demos a robot that mimics his body language and follows commands during the grand opening of the JPMorgan Chase & Co. AI Maker Space on Wednesday at the Tepper Building.

of AI leaders,” said CMU President Farnam Jahanian.

“Our students will use hands-on tools and open environments to further sharpen the cutting edge of AI.”

The maker space, which is located in CMU’s Tepper School of Business in Oakland, will open for student use in January 2022 at the start of the spring term, according to director Reid Simmons.

Construction began in December 2019 and was completed in just a few months, but the COVID-19 pandemic delayed the grand opening.

On Wednesday, an autonomous robot from Fetch Robotics, a company based in El Segundo, Calif., cut the ribbon to commemorate the new space.

After a failed attempt that led the machine to briefly

retreat back to its home base, Mr. Simmons joked that the world needed an AI maker space so robots could be programmed to do exactly as told – the first time around.

The facility is funded through donations from New York City-based JPMorgan Chase & Co., and it will go by the official title of “JPMorgan Chase & Co. AI Maker Space.”

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A spokesperson for CMU declined to say how much the maker space cost.

It might seem odd that a bank is investing in artificial intelligence research but, “financial institutions are waking up to the promise of AI,” said David Hudson, the global co-head for digital and platform services at JPMorgan.

From using software to make sure hiring practices are more equitable to using computer vision to better understand the markets, “AI is becoming deeply embedded in pretty much everything we do,” Mr. Hudson said.

“We really are a complex organization, but if you step back, everything to us looks like data,” he said. “And then when you squint at that, we really believe that AI will be the most transformative technology to our industry over the coming decade.”

Recently, JPMorgan awarded AI research prizes, funded Ph.D. fellowships, started an AI distinguished lecturer series and funded undergraduate students to come work for the bank, company officials said.

“Why the maker space?” Mr. Hudson said Wednesday. “We’re pushing those limits. ...We’re hoping this environment will help students – all students – find innovative ways to really start pushing the boundaries of what we know and what we think is possible.”

The center is an example of industry and academia collaborating, said Manuela



Cozmo, a robot from East Liberty-based Digital Dream Labs, sits next to cubes that it can be programmed to find and stack.

Veloso, head of AI research at JPMorgan.

Ms. Veloso had previously served as head of the machine learning department at CMU and helped launch the school’s undergraduate degree in artificial intelligence. CMU became the first university in the U.S. to offer such a program in 2018.

Looking through the large windows that let passersby peer into the maker space, you might see a drone flying around a netted area or a pair of robotic arms working together to lift a square from the table below them. The machine from Fetch Robotics might wheel itself over and put up its own robotic arm, trying to best its mechanical competitors to get the square first.

A version of the humanoid Pepper, from Tokyo-based

SoftBank Robotics, might be mimicking the arm movements of a human companion, or taking a bow and welcoming visitors.

In the robot playground, which looks like a large sandbox without the sand, machines from Colorado-based Misty Robotics, use their big, expressive eyes to indicate whether or not they recognize the person standing in front of them. A green light and a smile means yes. A red light and a frown means no.

Cozmo, a tiny robot with equally large eyes that was acquired by East Liberty-based Digital Dream Labs in 2020, could also be rolling around the arena, looking for a maze to navigate or blocks to stack. Depending on its mood, and how it’s programmed that day, Cozmo may even pop a wheelie, using

those blocks to prop itself up, or it could throw an elaborate temper tantrum.

By putting the space in the business school, Mr. Simmons and other stakeholders at CMU hope to inspire collaboration across departments. Mr. Simmons is even hoping for a partnership with some students studying the fine arts to put on a drone performance.

For now, the space is scheduled to host two classes in the spring term focused on human and robot interaction.

When people ask what the space will be used for, Mr. Simmons reaches for “mundane” examples, like having a robot load and unload the dishwasher or fetch a beverage from the smart fridge. But he expects bigger ideas to come from the students.

“The imagination and creativity of Carnegie Mellon students is really amazing, and once we provide them with the appropriate tools and the opportunity to exercise their imagination, I truly believe that there’s going to be a real flourishing of outcomes here,” Mr. Simmons said.

“The things that I can’t even imagine are the things that are going to come out of this and it’s just going to blow our minds.”

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