Uber launches its own AI lab to make food deliveries faster and self-driving cars better

Ride-hail giant acquires Geometric Intelligence to staff new lab

by Andrew J. Hawkins | @andyjayhawk | Dec 5, 2016, 10:19am EST

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Uber just announced the launch of Uber AI Labs, a new research group focused on improving everything from the route of your food delivery to the way your self-driving Uber car navigates the roads. The lab will be staffed by members of a startup called Geometric Intelligence, which Uber says it has just acquired for an undisclosed sum.

The announcement of the new lab comes as Uber continues to operate a fleet of self-driving cars in Pittsburgh, where it's been offering rides to a select group of customers since September. It also comes amid a significant refresh for Uber's app, streamlining many of its features in the interest of making it easier to use than ever. A spokesperson said the AI lab will be working on problems across the business, including the self-driving pilot.

THE NEW AI LAB WILL BE WORKING ON PROBLEMS ACROSS THE BUSINESS

Geometric Intelligence was founded in October 2014 by three professors and a grad student: Gary Marcus, a cognitive scientist from NYU; Zoubin Ghahramani, a Cambridge professor of machine learning; Kenneth Stanley, a professor of computer science at the University of Central Florida; and Douglas Bemis, a recent NYU graduate with a PhD in neurolinguistics.

Marcus will head the new lab at Uber as director, with Ghahramani serving as co-director. Most the startup's 15-member team will move to San Francisco. All the academics will retain affiliations with their respective universities, though some will be taking leave to work at Uber full-time.

In its short run, the startup has focused on the "sparse data" problem of how to build artificial intelligence that can quickly recognize objects or situations with a much smaller amount of "training" input data than is required by today's techniques. Geometric Intelligence developed a software called Xprop that "requires significantly fewer examples than the dominant form of machine learning software, known as deep learning, to learn a new visual task," according to the *MIT Technology Review*. The startup's researchers recently co-authored a study focused on deep generator networks, which create these images and show how each neuron in the network affects the entire system's understanding.

The acquisition of Geometric Intelligence suggests that Uber is interested in developing powerful speech- and image-recognition software like Google and Microsoft, but produced with less-data-hungry algorithms. "We live in this era of big data, and there's this idea that we can just throw more data at the problem," Marcus told a tech audience back in May 2016. "But for some problems there's just not enough data."

Uber's chief product officer, Jeff Holden, said that despite some early wins in machine learning, "we are still very much in the early innings of machine intelligence."

"NEGOTIATING THE REAL WORLD IS A HIGH-ORDER INTELLIGENCE PROBLEM."

"With all of its complexity and uncertainty, negotiating the real world is a high-order intelligence problem," Jeff Holden, chief product officer at Uber, wrote in a blog post today. "It manifests in myriad ways, from determining an optimal route to computing when your car or UberEATS order will arrive to matching riders for uberPOOL. It extends to teaching a self-driven machine to safely and autonomously navigate the world, whether a car on the roads or an aircraft through busy airspace or new types of robotic devices."

Geometric Intelligence is the latest acquisition for Uber as it continues to expand its business and take advantage of its billions of dollars in raised capital — despite how shaky that foundation may be. Earlier this year, the company bought the self-driving truck company Otto, which just recently completed its first autonomous shipment in Colorado.

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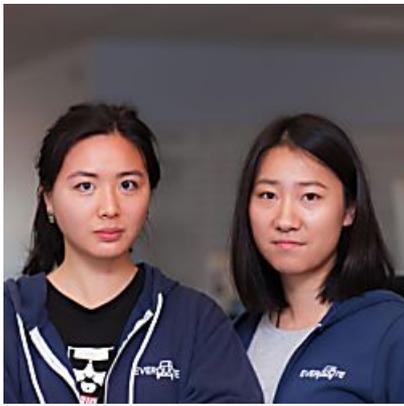
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