

Ken Goldberg

BOSS

M A G A Z I N E

5 Sophisticated AI Robots

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[UC Berkeley AUTOLAB: DexNet 2.0: 99% Precision Grasping](#)

Nimble Fingered AI Robot (Excerpt)

Although not as flashy as a bartending robot or as in the public eye as the AI robots developed by MIT, DexNet 2.0 is one of the most important robots currently in development. DexNet 2.0 has been dubbed the “nimble-fingered robot”, whose high grasping success rate hints at a sooner-rather-than-later application in industry.

While irregularly shaped items—think shoes, rubber ducks, and even open boxes—are a cinch for humans to pick up, robots struggle with the understanding to apply a proper grip.

DexNet 2.0, created by Berkeley professor Ken Goldberg, postdoctoral research Jeff Mahler, and the Laboratory for Automation Science and Engineering, has an incredible 99 percent success rate when picking up unfamiliar objects.

Deep learning is to thank for this advancement. Researchers and engineers built an enormous database—containing 6.7 million data points detailing 3D shapes—which they then connected to a neural network.

That neural network was then hooked up to DexNet 2.0, allowing it to rapidly study a shape in front of it and then select a strategy to grasp and successfully pick it up and move it.

Think about all the applications on a shop or manufacturing floor, or even at a construction site. We're excited to see the other applications DexNet 2.0 can be used for.