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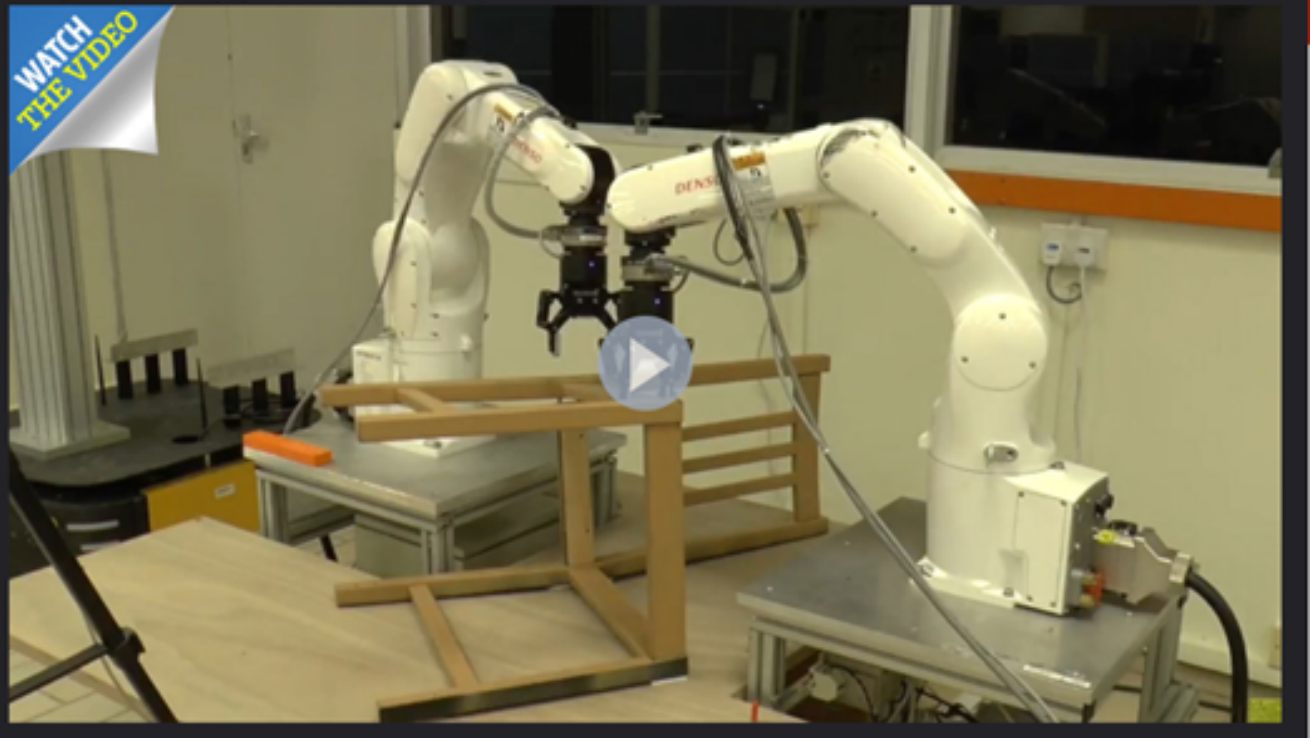
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DIY DROID This genius robot can build IKEA furniture in less than 10 minutes – so you don't have to

| This is truly the droid you've been looking for

By Saqib Shah
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ROBOTICS has conquered one of the most frustrating tasks known to man - assembling Ikea furniture.

A new droid can build a flat-packed chair in 8 minutes and 55 seconds, saving you an afternoon's worth of trouble.

The heaven-sent bot, which packs two robotic arms with grippers to pick up objects, took around 11 minutes to figure out how to complete the DIY task before getting to work.

A built-in 3D camera that acts as its "eyes" helped it to map the Ikea Stefan chair by taking snaps of its separate parts.

This helped it to cut through the overwhelming clutter of an unboxed flat-pack item that can drive us puny humans up the wall.



It took the new droid less than 9 minutes to assemble an Ikea Stefan chair

When it came time for some elbow grease, the force sensors in its hands allowed its fingers to hold even the tiniest of parts (like nuts, bolts, and screws) with a precise grip.

Meanwhile, its industrial robotic arms, capable of six-axis motion, gave it more freedom to move around compared to its stiff mechanical counterparts.

Now, if Ikea could just flat-pack the robot itself and get a drone to ship it out to us that would be ace.



NTU

NTU Singapore's Assistant prof Pham Quang Cuong, left, and research fellow Francisco Suárez-Ruiz, right, pose next to their bot and the chair it built

The droid is the brainchild of a team of scientists from Singapore's Nanyang Technological University (NTU).

“For a robot, putting together an IKEA chair with such precision is more complex than it looks,” said the robot's designer Professor Pham Quang Cuong.

"The job of assembly, which may come naturally to humans, has to be broken down into different steps, such as identifying where the different chair parts are, the force required to grip the parts, and making sure the robotic arms move without colliding into each other.

"Through considerable engineering effort, we developed algorithms that will enable the robot to take the necessary steps to assemble the chair on its own.

“We are looking to integrate more artificial intelligence into this approach to make the robot more autonomous so it can learn the different steps of assembling a chair through human demonstration or by reading the instruction manual, or even from an image of the assembled product.”