

# Lingohack

## Robot recycling

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### The story...

Robot recycling

### Learn language related to...

Technology

### Need-to-know language

**puncture-resistant** – strong enough to prevent holes appearing

**sensors** – pieces of equipment that react to changes in heat or light

**simulated** – created as a model to test something

**algorithms** – mathematical rules used by a computer to calculate something

**automation** – operation using machines not humans

### Answer this...

What percentage of stationary items could the robot identify?

**Watch the video online:** <https://bbc.in/2X9SbNK>

### Transcript

This robot can automatically sort recyclable rubbish. The RoCycle system by MIT has a soft, **puncture-resistant** hand. Pressure **sensors** on its fingertips detect an object's size and material. It then autonomously places the item in the appropriate recycle bin.

### Professor Daniela Rus, Director, MIT CSAIL

With computer vision alone, the systems are not able to separate paper from plastic. Many paper and plastic cups look the same, but by introducing the ability to squeeze the object and to know whether it's flexible or not – we are able to go one step beyond what today's methods can do.

The goal of the system is to reduce the back-end cost of recycling. It currently has 85 percent accuracy in identifying stationary items, but only 63 percent accuracy on a **simulated** conveyer belt.

A common error was identifying paper-covered tins as paper. But how are researchers looking to improve the system?

**Professor Daniela Rus, Director, MIT CSAIL**

We plan to create a much more detailed sensorised skin. We plan to develop the hand at different sizes and we plan to improve our **algorithms** for recognition. We're very excited to see the use of robot **automation** in solving a problem that matters globally.

**Did you get it?**

What percentage of stationary items could the robot identify?

The robot currently has 85 percent accuracy in identifying stationary items.