

Bots Put Recycling in its Place

By [Ethan Pate](#) / [Tech in Real Life \(IRL\)](#) / February 2023 Issue



IMAGE BY [RAVI SHAH ON FLICKR](#)

In the movie, Wall-E, a trash-collecting robot is one of the few beings left on a heavily polluted and trash-covered Earth. While this scenario hopefully will never happen, robots like Wall-E may one day become a reality. Countries around the world are looking to technology for solutions for recycling and reusing trash, including Artificial Intelligence (AI) waste management

Currently, no more than 1 out of 10 recyclable objects are actually recycled. This is because much of the plastic, aluminum, or glass in our world is just thrown away and sent to landfills without being sorted and reused. This is where the robots come in!

In order to decrease the number of objects that are being sent to landfills, waste processing facilities are now using robots with advanced cameras and AI that can not only spot recyclable goods as they come by on a conveyor belt but also use a clawlike mechanical arm to grab and sort the recyclable objects. This process is pretty neat to watch and makes me wish I was that good when trying to grab a toy out of a claw machine.

Compared to a human garbage/ recycling sorter, the robots are able to sort twice as many objects in the same amount of time. And, most importantly, they can work faster without the possibility of getting hurt by dangerous items in the garbage. This is really important because being a human trash sorter can be a hazardous job. And, with the robots doing the “dirty work”, factory workers can attend to other important jobs at the facility like helping move and organize all the sorted materials for recycling.

The coolest thing about these robots is that they use machine learning. This means that the more garbage and recycling they sort, the more they improve and become super sorters. These robots are even being taught to remove compostable items like banana peels from the trash, something that is really important in reducing the amount of greenhouse gasses landfills create.

But AI-enabled recycling robots are not just for smart recycling facilities. AI is even being built into IoT-enabled community rubbish bins that not only sort recycling but also sense when they are becoming full and schedule themselves to be emptied. Imagine that; a garbage can that takes itself out!

While this is all part of the solution to fighting climate change, advances in things like waste management give me some hope

that the skyscrapers of garbage seen in Wall-E will stay in the movies.

Learn More

AI Recycling in Action

https://www.youtube.com/watch?v=DKOf6yFepHA&ab_channel=Forbes

Recycling Guide

<https://www.reusethisbag.com/articles/kids-guide-to-recycling>

The Importance of Recycling

<https://www.youtube.com/watch?v=71DmyhloazQ>

Climate Basics for Kids

<https://www.c2es.org/content/climate-basics-for-kids/>

Issues with Landfills

https://www.ducksters.com/science/environment/land_pollution.php

AI Resources for Kids

<https://brightchamps.com/blog/5-best-ai-resources-for-kids/>

Machine Learning for Kids

<https://machinelearningforkids.co.uk/>

AI Robotics in Recycling

<https://www.colorado.edu/center/2022/04/06/ai-robotics-recycling>

Artificial Intelligence for Recycling

<https://ellenmacarthurfoundation.org/circular-examples/artificial-intelligence-for-recycling-amp-robotics>

Trashbot uses AI to Sort Recycling

<https://techcrunch.com/2022/08/12/trashbot-uses-ai-to-sort-recyclables/>

Smart Robots for Recycling Waste

<https://www.youtube.com/watch?v=qxtnXCKgnEI>

Improve your recycling habits

https://www.howlifeunfolds.com/sustainability/how-improve-your-recycling-habits-and-help-planet?gclid=Cj0KCQiA4uCcBhDdARIsAH5jyUmUAkClx-dk3kSukj6UNXnypA0EU9vbMV9A1lpPV3hznqBv0o0favsaAk04EALw_wcB&gclidsrc=aw.ds&utm_medium=cpc&utm_source=google&utm_campaign=Expressives+-+Resource+Stewardship+-+Phrase&utm_keyword=recycle+recycling

What NOT to Recycle

<https://www.uwlax.edu/recycling/what-to-recycle/non-recyclable-items/>

What can and cannot be recycled

<https://ecoscraps.com/blogs/sustainable-living/76411652-a-simple-list-of-what-can-and-cannot-be-recycled>

How Robots can help solve recycling problem

<https://abcnews.go.com/US/robots-solve-us-recycling-problem/story?id=80800450>

30 Recycled Crafts for Kids

https://www.goodhousekeeping.com/home/craft-ideas/g39561047/recycled-crafts-for-kids/?utm_source=google&utm_medium=cpc&utm_campaign=arb_ga_ghk_d_bm_prog_org_us_g39561047&gclid=Cj0KCQiA4uCcBhDdARIsAH5jyUI6W1qdATA_Kyp2Bm_1Ti6zQmqXkp5fIEH-I50l1rweFi6JsW7QsXcaAlfiEALw_wcB