

Reading 2

Skills:

- Details
- Connect information

Getting started: What kind of machine we have now is something you never imagined humans could invent?

THE INDUSTRIAL ROBOTS OF TOMORROW UNDER DEVELOPMENT TODAY



Industrial robot technology progresses rapidly. The robots of the future will have more capabilities than today's robots, automating tasks that were previously impossible. Many of these robots of tomorrow, the ones that will transform the way we work, the way we travel, the way we purchase items and more are under development today. In several of the most innovative robotics labs around the country, the limits of robot technology are being greatly expanded and entirely new forms of automation are emerging.

While there are many different types of robotic technology being tested, there are a few emerging technologies that will be particularly impactful.

Human Robot Interaction: Much of today's robotics research has more to do with people than it does with robots. Human robot interaction (HRI) is an increasingly popular area of development as understanding people's facial expressions, body language, and behavior has potential consequences in collaborative robotics, self-driving cars and more.

Snake-Like Mobility: Mobile robots with a snake-like body are being developed for a number of uses. For search and rescue missions, as well as medical procedures, these mobile robots travel where humans cannot to help save lives. The bodies feature many different joints that allow them to bend, swim and climb.

Legged Mobility: robots with functional legs can travel places where wheeled robots can't and offer a much more stable platform for applications such as package delivery. In fact, tomorrow's self-driving delivery trucks may feature walking robots to deliver packages to your door.

Multi-Robot Coordination: the proliferation of robots outside of the factory setting will eventually require advanced coordination beyond what today's robots are capable of. For example, search and rescue **UAVs** and **UGVs** could be working in unison to scan an area quicker and more carefully.

Underwater Robotics: robots are becoming more commonly used underwater, typically for studying the health of the oceans. Some types of robots feature a suite of **on-board** sensors that collect data as the robot autonomously moves through the water, even through strong currents.

The few types of robotic technology under development listed above are among the most advanced, but there are several others, including self-driving vehicles, robotic intelligence, machine learning, and more. On top of this, robotic integration services for validation and testing have had to evolve dramatically as robotic research pushes the technology forward. Big changes are occurring in the robotics industry and radical new forms of robotic technology are not far away from reality.

*Adapted from <https://www.automate.org/blogs/the-industrial-robots-of-tomorrow-under-development-today>

Glossary:

- **UAVs:** UAV stands for “unmanned aerial vehicle”, commonly referred to as a drone, the actual aircraft being piloted by remote control or onboard computers.
- **UGVs:** A UGV is a vehicle that does not need a driver but can be controlled remotely or can control itself. UGV is an abbreviation for “unmanned ground vehicle”.
- **On-board:** Denoting or controlled from a facility or feature incorporated into the main circuit board of a computer or computerized device.

Read the following features and match them with the robot being described. Write HRI (Human Robot Interaction), SLM (Snake-Like Mobility), LM (Legged Mobility), MRC (Multi-Robot Coordination), or UR (underwater Robotics).

1. These robots can access rough surfaces that a robot moving through wheels could not. _____
2. These robots can help to obtain important information about the sea. _____
3. These robots can become tomorrow’s mailmen. _____
4. These robots will be possible if researchers are able to copy human features. _____
5. These robots can help find injured people if there’s a natural disaster. _____
6. These robots can be used in rivers or oceans. _____
7. These robots can be used during a surgery. _____

What do you think?

Is there any kind of robot that should be invented as it would make our lives easier?