



X1: First Multi-Robot Team Deployed in Rescue Missions

Description

Late last year, in Pasadena, California, a robot named X1 walked across the California Institute of Technology (Caltech) campus. This robot carried a second robot on its back. The X1 system was designed for tasks that are too dangerous for humans.

Engineers from Caltech and Abu Dhabi's Technology Innovation Institute (TII) developed this robot duo as part of a three-year project. Each robot has a specific role, working together as a team.

The project is led by Aaron Ames, who focuses on robots that operate without direct human commands. The primary robot in the X1 system is a modified humanoid robot that can walk and carry heavy equipment. The second robot, called M4, can change shape to fit different tasks.

During a demonstration, the X1 system moved from a lab through a library and outside. The humanoid robot lifted M4 into the air as a drone. After completing its mission over a pond, M4 landed and returned to its carrying position.

Researchers highlight that X1 can adapt its movements to different challenges, like stairs or rough terrain. They aim to ensure that when robots like X1 are used in emergencies, they can make safe decisions on their own. The team hopes to show that these robots can be trusted in disaster situations, providing help without risking human lives.

Vocabulary List:

1. **humanoid** //ˈhju:mə,nɔɪd// (adjective): having a human shape or appearance
2. **demonstration** //,dɛmən'streɪʃən// (noun): a public showing of how something works
3. **adapt** //ə'dæpt// (verb): to change behavior to fit new conditions
4. **terrain** //tə'reɪn// (noun): the shape and type of land
5. **emergencies** //ɪ'mɜːdʒənsɪz// (noun): dangerous or sudden situations needing quick help
6. **duo** //ˈdu:ə// (noun): a pair of two people or things

Comprehension Questions

Multiple Choice



1. What is the name of the robot that walked across the Caltech campus?

- Option: M4
- Option: X1
- Option: TII
- Option: Aaron

2. Who is leading the project for the X1 robot?

- Option: Aaron Ames
- Option: Researchers
- Option: Engineers
- Option: Caltech

3. What is the secondary robot in the X1 system called?

- Option: X1
- Option: M4
- Option: Caltech
- Option: TII

4. What type of robot is the primary robot in the X1 system?

- Option: Drone
- Option: Humanoid
- Option: Quadruped
- Option: Biped

5. Which institution collaborated with Caltech to develop the X1 robot?

- Option: MIT
- Option: Stanford
- Option: Technology Innovation Institute
- Option: Harvard

6. What was one of the challenges that X1 can adapt its movements to?

- Option: Water
- Option: Low Visibility
- Option: Stairs
- Option: Snow

True-False



7. The X1 robot is capable of making decisions without any human commands.
8. M4 is equipped to carry heavy equipment.
9. The project for the X1 system is a one-year initiative.
10. Researchers believe that robots like X1 can be trusted in disaster situations.
11. The X1 robot demonstrated its capabilities indoors only.
12. Engineers developed the X1 robot alone without any collaboration.

Gap-Fill

13. The X1 robot was designed for tasks that are too dangerous for _____ humans.
14. The secondary robot, M4, can change _____ to fit different tasks.
15. Researchers aim to ensure robots like X1 can make safe _____ on their own.
16. The project involving the X1 system is a three-year _____ project.
17. During the demonstration, X1 moved from a lab through a _____ and outside.
18. The humanoid robot lifted M4 into the air as a _____ during its demonstration.

Answer

Multiple Choice: 1. X1 2. Aaron Ames 3. M4 4. Humanoid 5. Technology Innovation Institute 6. Stairs

True-False: 7. True 8. False 9. False 10. True 11. False 12. False

Gap-Fill: 13. humans 14. shape 15. decisions 16. research 17. library 18. drone

CATEGORY

1. Sci/Tech - LEVEL3

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4. meet x1
5. multi-robot team
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