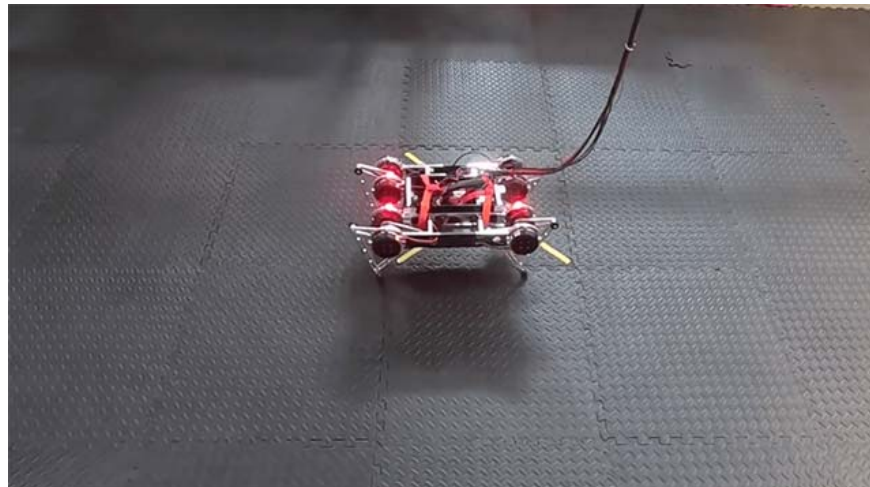


This robot only takes 2 hours to learn to walk by itself

This may sound simple, but in reality, it's difficult to design your own robot controllers that handle such diverse and complex navigation commands.

In a recent study conducted at Google, engineers tried using an artificial intelligence (AI) model as the basis for creating a four-legged robot that can learn ways of itself. Extremely natural movement without too much human assistance, such as moving forward, backward, turn left and right. In addition, it can also learn how to accurately move on three different types of terrain, including flat ground, soft cushions and rugs.

This may sound simple, but in reality, it's difficult to design robot controllers that can handle such complex and complex navigation commands, especially on different types of terrain, without the help of AI. The key problem is that robots can learn and adapt themselves to many situations, instead of always requiring human intervention in every step.



The AI technology used in this project is called 'deep reinforcement learning', an approach based on deep learning technology inspired by learning psychology. It involves 'trial and error' and 'learning from mistakes'. The power of deep reinforcement learning technology was first demonstrated in 2013 when DeepMind released an AI model that could learn how to play the classic Atari game without any instructions.

Video games, or at least simulation games, are also often used by robot researchers to train their AI models. It creates a great theoretical environment, allowing researchers to train their robots in a virtual world before stepping out into the real world, helping robots recognize and remember the situations it experiences when learning how to carry out a specific task.

In addition, Google researchers are also pushing to develop improved algorithms that allow their robots to learn faster with less experimentation.

The robot can learn to walk by itself for 2 hours may not be a shocking result, but it shows a clear difference in efficiency compared to the engineers who have to program specifically for each operation, The way robots work manually and is extremely passive as before. However, the difficulties faced by the Google team are also enormous.

'Although many unsupervised learning algorithms or deep consolidation learning have been demonstrated in simulations, applying them on robots in practical tests is not easy. First, deep consolidation requires a huge amount of training input, and collecting robot data is also very expensive. Second, the training process requires a lot of time to supervise robots. If we need a robot supervisor and reset it every time it stumbles - hundreds or thousands of times - it will take a lot of effort and time to train the robot. The longer it takes time to expand the learning scale for robots in different environments, the more difficult it will be, 'said Jie Tan, one of the project's key engineers.

In the future, this research could help create faster, more adaptable robots with different types of terrain. The potential for application is huge, but the project is at an early stage of development and there are still many challenges to be overcome.

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