

# AI ASSISTS NASA TO SPOT CRATERS ON MARS

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The HiRISE camera aboard NASA's Mars Reconnaissance Orbiter took this image of a crater cluster on Mars. | Picture by special arrangement.

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Last week, NASA said it spotted previously unknown craters on Mars with the help of artificial intelligence (AI) for the first time.

The space agency developed an AI tool to analyse images captured by NASA's Mars Reconnaissance Orbiter (MRO), which led to the discovery.

Scientists identified craters made by pieces of a meteor on the red planet. The largest of the craters is about 13-feet (4 meters) wide, and in total, the craters span about 100 feet (30 meters) of the planet's surface, NASA said in a statement.

MRO has been orbiting the planet for 14 years, and its data has been used to locate more than 1,000 new craters.

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Scientists used a two-step process to confirm the craters on the red planet.

First, they deployed AI to take a look at orbiter's Context Camera's low-resolution images and analyse if they captured any craters. Then, using HiRISE instrument, they verified the images picked by the AI.

NASA says, the instrument is capable of showing details as fine as the tracks left by the Curiosity Mars rover. However, it takes about 40 minutes for a researcher to thoroughly examine a single Context Camera image, while the AI tool takes an average of five seconds to do it.

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On August 26, HiRISE confirmed that a dark smudge detected by the classifier in a region called Noctis Fossae was in fact the cluster of craters, the space agency noted.

The AI tool was trained using a small set of images from the Context Camera, including locations, with previously discovered impacts, and with no fresh impacts. Later, it was used to scan the camera's entire repository of over one lakh images.

"AI can't do the kind of skilled analysis a scientist can," Kiri Wagstaff, JPL computer scientist, said. "But tools like this new algorithm can be their assistants. This paves the way for an exciting symbiosis of human and AI 'investigators' working together to accelerate scientific discovery."

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