

# REMOVING SPACE JUNK USING ARTIFICIAL INTELLIGENCE

Relevant for: Science & Technology | Topic: Space Technology & related matters

With more junk accumulating all the time, satellite collisions could become commonplace | Photo Credit: [EPFL](#)

To help the European Space Agency remove space debris, a team of researchers from the Switzerland-based Ecole Polytechnique Federale de Lausanne (EPFL) is developing an Artificial Intelligence (AI)-based technology.

"With more junk accumulating all the time, satellite collisions could become commonplace, making access to space dangerous," EPFL said in a statement.

It has set a mission to burn up Vespa, an obsolete payload adapter orbiting 660 kilometers above the Earth, by 2025. Vespa was once part of the European Space Agency's Vega rocket.

To burn it, the team plans to use robotic arms of a capture rocket to grasp the Vespa and pull it back into the atmosphere.

A camera attached to it will be used to identify the Vespa that researchers believe is a challenge as nobody has really seen the space junk.

They are developing deep learning algorithms to estimate the target from video sequences and images taken in space.

EPFL is creating a database of synthetic images of the target object, a detailed 3D model of the Vespa to train the algorithms.

"The more exciting aspect of the project is that we are developing an algorithm that will eventually work in space," said Mathieu Salzmann, project leader at EPFL's Computer Vision Laboratory.

However, researchers believe that making these algorithms 100% reliable in such harsh, and relatively unknown conditions with limited computational resources, is a challenge.

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