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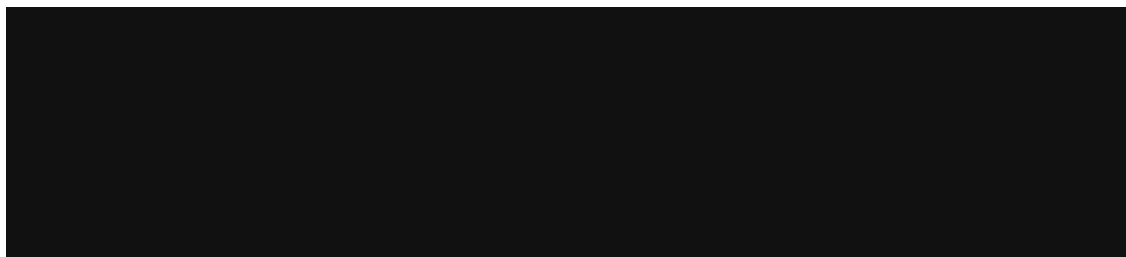
TECH ET

How Robots Could Adapt Like Animals to Explore Space

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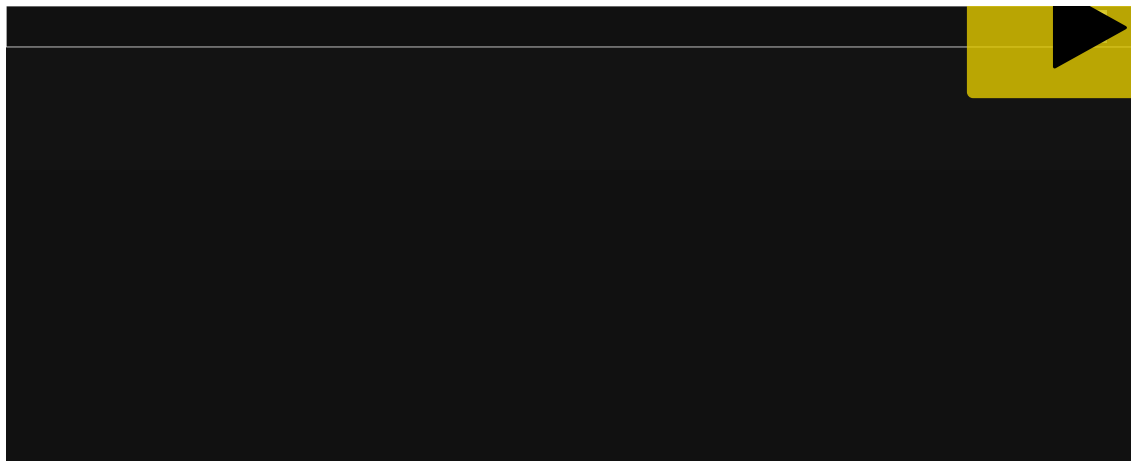
A robot exploring the depths of outer space or a nuclear disaster site can't call a mechanic if it breaks. Instead, it will have to adapt. A new study suggests robots are capable of doing exactly that. Researchers tested two test subjects: a hexapod robot with six legs, and a robotic arm. The hexapod faced broken, missing and damaged legs as it tried to cross a floor in a straight line. The arm had to drop ping pong balls into a cup after it was broken in 14 different ways.



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The goal of the study, which was published Wednesday in the journal "Nature," was to see whether an algorithm would allow robots to adapt to their "injuries" and complete their tasks. It had to predict the likely performance of thousands of different behaviors, learn from each one the robot attempted, and know when to stop because it had discovered the right one. The hope was to make "robots behave more like animals by endowing them with the ability to adapt rapidly to unforeseen circumstances," according to the study -- and it worked. The trial-and-error algorithm developed by robotics researcher Jean-Baptiste Mouret and his team had the robots adjusting to their new situation in less than two minutes. Ultimately, the hope is that robots exploring hostile environments — like distant planets or the deep ocean — could continue their missions even if they break a limb or lose power to certain extremities.





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I am participating to an AMA on Reddit with [@jeffclune](#) and K. O. Ellefsen (following our paper in Plos Comp. Bio.) <https://t.co/7toygQQ7pH>
— Jean-Baptiste Mouret (@jb_mouret) [May 13, 2015](#)

— Keith Wagstaff

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