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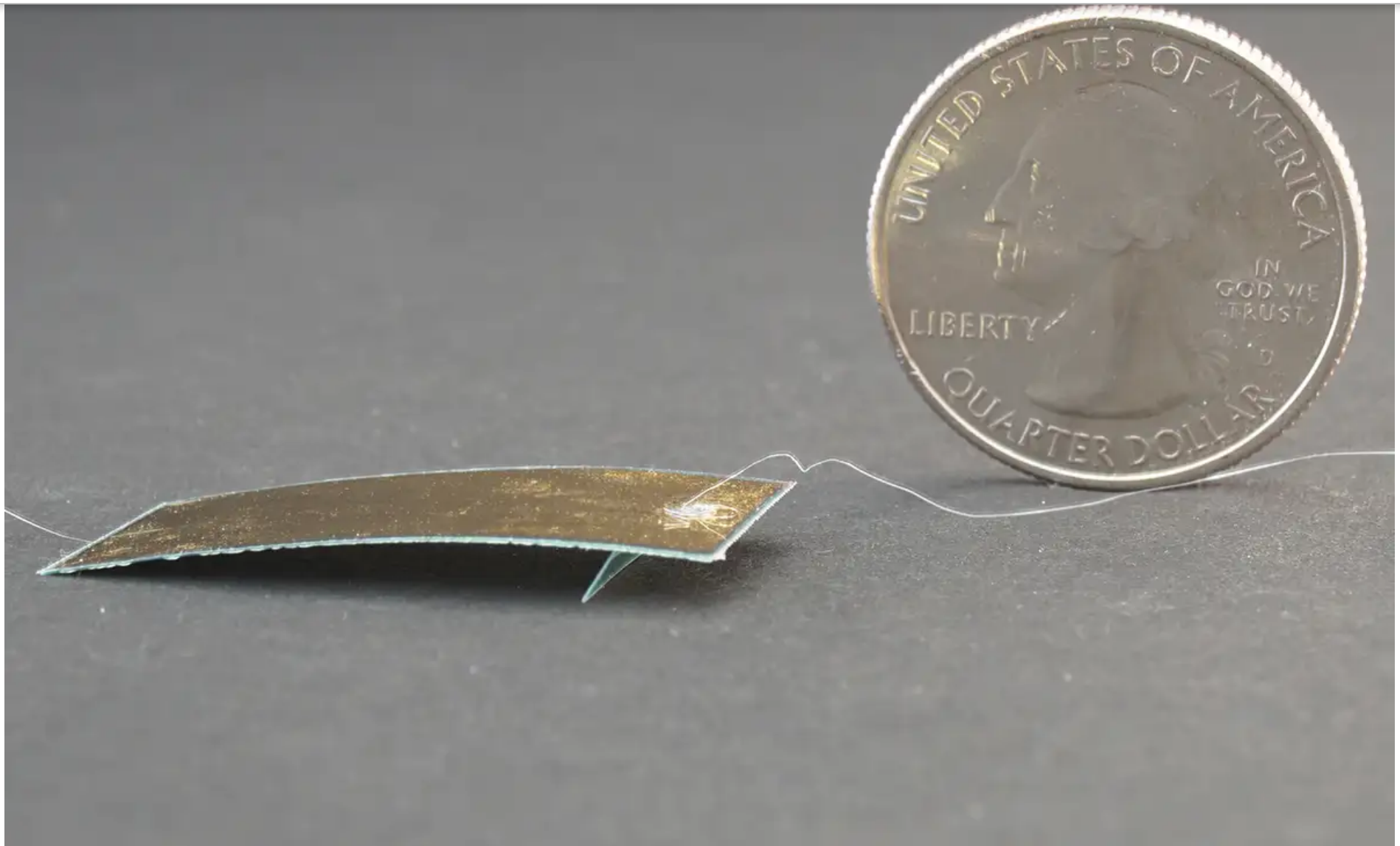
## Cockroach robot won't break after being repeatedly stamped on

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**TECHNOLOGY** 31 July 2019

By **Chris Baraniuk**





**This robot is tougher than it looks**

Junwen Zhong, Yichuan Wu and Liwei Lin



Ever tried to stamp on a pesky insect only to see it scuttle off gleefully once you raise your shoe? You may soon have the same difficulty eradicating tiny robots. A simple machine seems to have the robustness of a common cockroach.

“It looks really like a cockroach moving on the ground,” says [Liwei Lin](#) at the University of California, Berkeley. He and his colleagues describe their prototype robots, comprising a curved rectangle and angled front leg. They are up to 3 centimetres and weigh less than 0.07 grams.

When electricity is applied each robot’s body contracts and expands in quick succession. During these motions, the front leg strikes the floor surface and helps to propel the bot forward – at speeds of up to 8.7 centimetres per second. The devices can carry up to six times their weight. One successfully transported a single peanut, for example.

The robots easily survive a human stepping on them. Lin says that in experiments a member of his team tried stamping aggressively on one of the devices with as much force as they could muster.



While further work is needed to ensure that the robots' direction of movement can be accurately controlled, says [Tim Helps](#) at the University of Bristol, he think they could soon be used in industrial contexts – perhaps inspecting pipes or sewers.

**Journal reference:** *Science Robotics*, [DOI: 10.1126/scirobotics.aax1594](https://doi.org/10.1126/scirobotics.aax1594)

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