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Devin Coldewey, NBC News - 9 min.

Video: Squishy virtual creatures 'evolve' walking behaviors

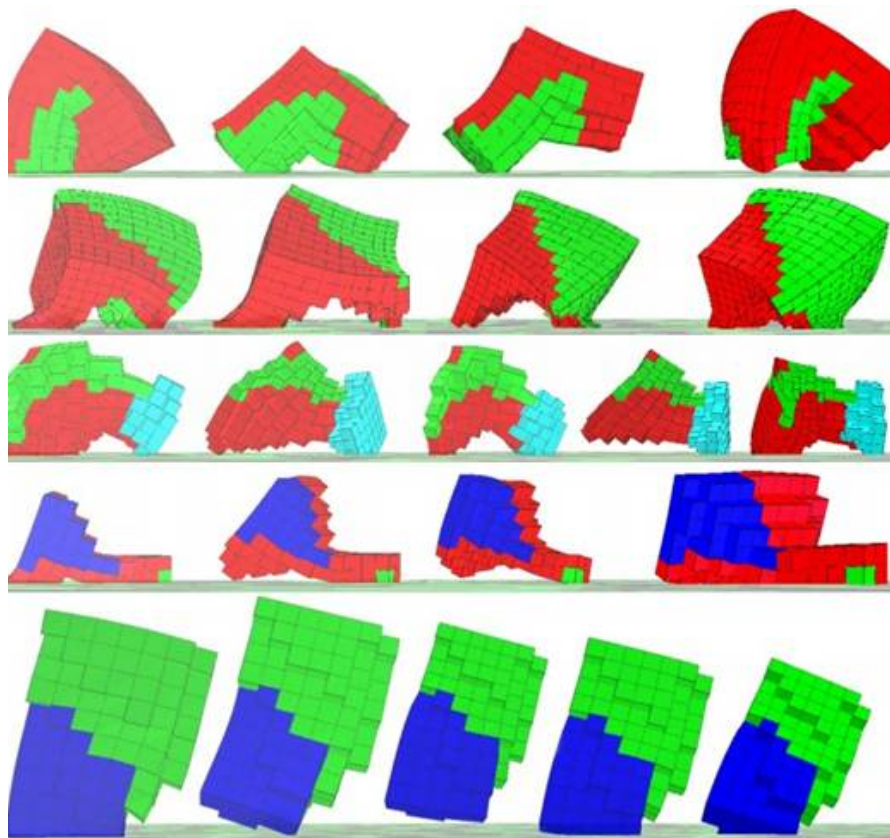
Evolving Soft Robots with Multiple Materials (m

Simulating creatures has been a staple of biological science for years, but this video shows advances in the field that are both interesting and a little creepy. These virtual "soft robots" evolved bizarre but somehow natural-looking gaits over thousands of generations.

A team of researchers, led by Jeff Clune at the University of Wyoming's Evolving AI Lab, created a new way of simulating and evolving virtual creatures that is striking both academically and visually.

Such research generally involves creating digital critters from 3-D shapes and connectors that attempt to move around or accomplish some other task. The best contribute their characteristics to the next "generation," and after thousands of such adjustments, they show interesting characteristics not seen in nature, like a five-legged walk, for example.

But the methods used to make and test these creatures hasn't advanced much since the mid-1990s,



Jeff Clune

Soft robots, from top: walker, incher, push-pull, jitter, and jumper.

when they were first made. Clune and his team had the idea of using today's improved processing power to add complexity, adding squishy, muscle-like materials to the mix.

The result, as the video above shows, is that these creatures move uncannily like real animals — animals made of soft cubes, that is. They walk, inch, jump, and flail in humorous and fascinating ways.

Such impressive simulations give insight into the evolutionary processes that lead to such specialized locomotive methods as a bat's wing-walk or a slug's slimy inching. They also show the power of computational algorithms, which can create varied and complex behaviors like these with very little human interference.

The paper describing the methods and intentions of the simulation [can be downloaded from Jeff Clune's website](#) — along with a few other videos. Anyone interested in creating their own virtual creatures may try downloading [breveCreatures](#), a screensaver that performs this type of experiment using a home computer's spare time.

— via [IEEE Spectrum](#)

Devin Coldewey is a contributing writer for NBC News Digital. His personal website is [coldewey.cc](#).

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