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NEW 3D-PRINTED ROBOT HAND PLAYS PIANO

Relevant for: Science & Technology | Topic: Robotics & Artificial Intelligence

Scientists have developed a 3D-printed robotic hand which can play simple musical phrases on the piano by just moving its wrist.

The robot hand, developed by researchers at the University of Cambridge in the U.K., was made by 3D-printing soft and rigid materials together to replicate all the bones and ligaments — but not the muscles or tendons — in a human hand.

Using ‘passive’ movement — in which the fingers cannot move independently — the robot was able to mimic different styles of piano playing.

The results, published in the journal *Science Robotics*, could help inform the design of robots that are capable of more natural movement with minimal energy use.

Complex movement in animals and machines results from the interplay between the brain (or controller), the environment and the mechanical body.

“Smart mechanical design enables us to achieve the maximum range of movement with minimal control costs: we wanted to see just how much movement we could get with mechanics alone,” Josie Hughes from Cambridge..

The robot was ‘taught’ to play by considering how the mechanics, material properties, environment and wrist actuation all affect the model of the hand.

By actuating the wrist, it is possible to choose how the hand interacts with the piano, allowing the embodied intelligence of the hand to determine how it interacts with the environment. The researchers programmed the robot to play a number of short musical phrases with clipped (staccato) or smooth (legato) notes, achieved via the movement of the wrist.

Geek.com reports that SplashData has released its list of the top 25 worst passwords of 2018.Password management application provider SplashData

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