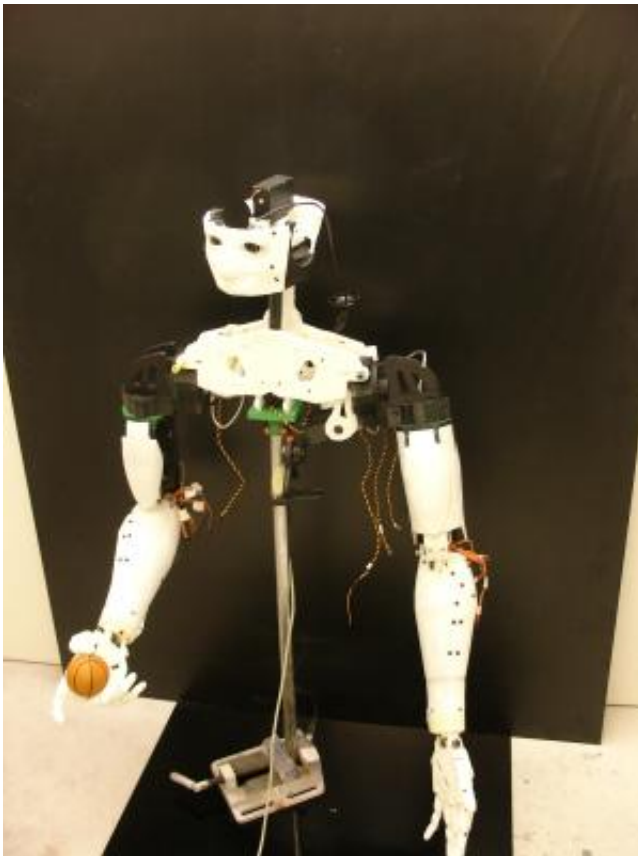


## Open source 3-D printed robot extends hand to DIY fans (w/ video)

January 23 2013, by Nancy Owano

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(Phys.org)—Gael Langevin, a French sculptor and model maker, has a project that he would be happy to share with others with similar enthusiasm for putting their imaginations to work in 3-D printing. Since last year he has been busy with the design and painstaking engineering of

a humanlike robot called InMoov. It is designed to be a robot that one can 3-D print and animate following the maker's [instructions](#).

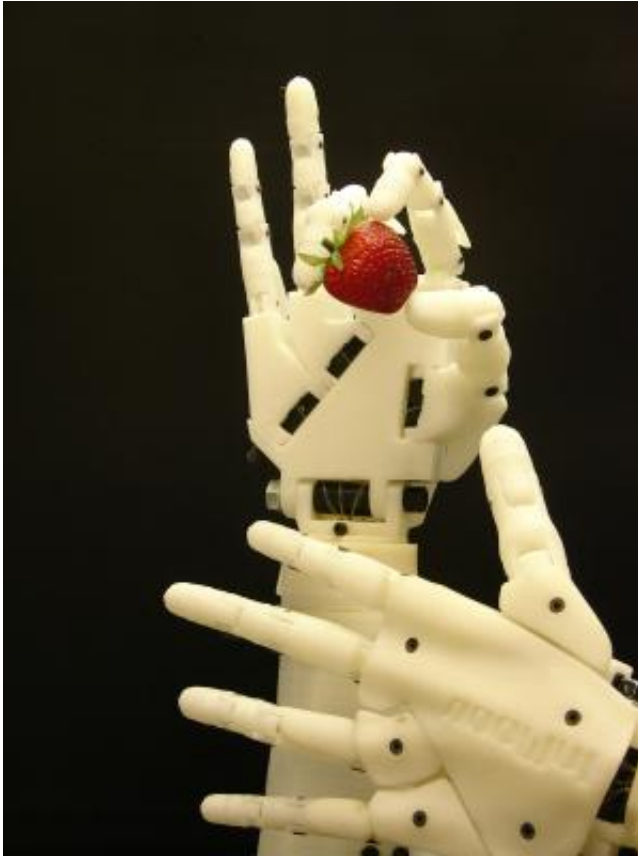
He told the world on his blog that he had to redesign and print a few times before he finally got InMoov the way he wanted to. "My second design was too large to stay in a human size range."

Presently, he has succeeded in making a human-like [robot](#) with head and torso and movable hands who can respond to [voice commands](#). The robot is not cuddly, cute, or at all huggable. Physically, it may veer, for some viewers, toward an [Uncanny Valley](#). Nonetheless, making it cute does not seem to be his point, but rather to show what 3-D printing with off-the-shelf materials can do and to help others to do the same.

He began with making a right hand, designed in Blender and printed on a 3-D Touch. After several iterations, he added a shoulder, head, brain, and voice command. He shared details on Thingiverse, a site where one can share digital designs. Like Langevin, the site's team like to support others in making things.

"The body parts can be printed, but you'll have to add mechanical and electronic components such as cables, servos, and Arduinos to make the machine work," he said.

The list of [electronics components](#) includes Arduino uno x2; MG995 / HK2598 servos x12; Hitec HS805BB servos x8; -0.8mm nylon thread ([fishing line](#)); miscellaneous bolts; 3 kg natural ABS filament (various colors) and 6V 44A batteries and charger.



Some of his guideposts for enthusiasts, for example, are suggestions about replacing printed screw threads with linear actuators, for better accuracy and strength. "But I try to manage my wallet for this project," he said, "and I know a lot of you are in the same kind of position. So if you've got a thick wallet, you can replace those parts fairly easily. I have made the space for it and added attachment holes for to be adaptive."

He said that "working as a sculptor modelmaker for Factices Ateliers, in the real physical world, this is my contribution to the OpenSource 3-D world."

**More information:** [inmoov.blogspot.com/](http://inmoov.blogspot.com/)

[www.thingiverse.com/thing:17773](http://www.thingiverse.com/thing:17773)

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