

Dash Robotics: Origami-style robots for build-and-play fun

21 October 2015, by Nancy Owano



Parents eager to see children better prepared for their future digital world like projects that offer DIY tasks combined with simple programming. Summer camps do it; some schools are taking to it; there is also interest in finding toys where children can control objects from smartphone apps and learn about electronics, robotics and programming.

Dash Robotics has announced its Kamigami robots. Build it, program it, control it with your [mobile app](#), and have lots of fun.

The robot experience offers the opportunity to program for the robot's looks and behaviors. These are simple drag and drop activities ("set eyes to green; set eyes to red," etc.).

Their promotional video shows (of course) the battle of two robots, played with friends. Children can also toggle between individual and team play modes. The robots' IR sensors allow them to tag one another in team play modes, such as in battle games.

The creators have introduced a trio of characters, Musubi, Inari, and Goki, each with its own unique appearance.

The founders of Dash Robotics, who studied biomimicry and robotics at the University of California, Berkeley, are calling this their bio-inspired (cockroaches and lizards, for example) robots. They run very fast on six legs.

The team explained this further: "Biologists have discovered that all animals feature an alternating gait—whether they have two legs, four, six, or more. We've baked this into Kamigami by building a linkage that alternates the up and down motion of each leg. The circular motion of the motors is turned into elliptical motion of the legs through these linkages."

"Kamigami" is a name that refers to the type of paper used in origami. The parts snap together in an origami-like way. Interchangeable shells snap over the chassis. The robot works with components which include a small circuit board, battery, light sensor, IR sensor, gyroscope and accelerometer. The battery recharges in about 30 minutes. There are 45 to 60 minutes of playtime per charge.

The app works with iOS phones but the creators say Android support is coming next year. The price is less than \$70 (\$69) but the robot is now up on Kickstarter for a special price of \$49.

The \$49 pledge gets a [robot kit](#) and one decal. This what the kit includes: One full body [chassis](#) and one character shell of choice; the electronics, motors, battery and rivets; the app. No additional parts or tools are needed to assemble the robot. Estimated delivery is March.

Hayward, California-based Dash Robotics was founded in 2013 by four UC Berkeley PhD students. Evan Ackerman in *IEEE Spectrum* delivered his take on what the Dash team has

accomplished:

"We love Dash Robotics because they've managed to take serious research robots and turn them into serious toy robots that you can actually buy and play with, which is remarkable and kind of awesome."

Ackerman liked how "It's easy to build in about 30 minutes with zero tools, using just pop [rivets](#), no glue." He also mentioned that it is durable: a flexible construction allows the [robot](#) to shrug off falls and collisions. The chassis is made of a plastic-fabric composite which they invented.

More information:

[www.kickstarter.com/projects/2 ... tning-fast-origami-r](http://www.kickstarter.com/projects/2... tning-fast-origami-r)

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