

# Bird-like robot perches on a human hand (w/ Video)

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Montage of snapshots taken from the video of a flight test showing perching on a hand. Image credit: A. Paranjape, et al.

(Phys.org) -- Among the many challenges of designing flying robots is getting them to land gracefully. By taking a cue from birds, a team of engineers has developed a flapping-wing flying robot that can land by perching on a human hand.

“We believe we have the first demonstration of autonomous/robotic flight of a bird-like micro aerial vehicle (MAV) perching on a human hand,” said project leader Soon-Jo Chung of the University of Illinois at Urbana-Champaign. A paper on the demonstration is under review for

the *IEEE Transactions on Robotics*.

Hand perching involves two phases. First, the [robot](#) has to maneuver while gliding in order to reach the desired position, which it achieves by reorienting its articulated wings. Second, it has to “pitch up” right before landing to briefly climb and quickly reduce its touchdown speed.

As shown in the video, the researchers performed flight tests starting with launching the robot by hand from a height of about 2.5 meters. During the 1.5-second-long flight, the robot's speed decreases from 4.7 m/s to just under 2.5 m/s at the time of landing. As the robot glides to within a short distance of the hand target, it pitches up to a high angle of attack and then lands.

As the engineers explain, the ability to hand perch represents a significant step toward designing flying robots capable of close interaction with humans. In the future, they plan to work on a go-around capability to accommodate failures during perching attempts.

via: [IEEE Spectrum](#)

**More information:** A. Paranjape, J. Kim, and S.-J. Chung. "Closed-Loop Perching of Aerial Robots with Articulated Flapping Wings," *IEEE Transactions on Robotics*, under review, 2012. Pre-release paper [here](#).

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