

# Record-seeking pair show off robot solving Rubik's Cube

January 26 2016, by Nancy Owano

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After the first wave of satisfaction in solving a Rubik's Cube puzzle comes recognition that there are higher rungs to reach: not only solving it but solving it quickly. How quickly? That's the stuff of which world contests are staged.

And now Jay Flatland and Paul Rose have delivered a modest one-line

declaration in a video ready for the world: "My Friend Paul and I show off our Rubik's Cube solving robot." Not only that, but they are seeking recognition in the form of topping a world record in the time it takes to do a Rubik's Cube puzzle. Anthony Cuthbertson in *Newsweek* said their robot has clocked "a time five times quicker than any human can manage."

They are in the process of applying for an official world record.

In their design, stepper motors rest in a 3D-printed frame. The motors have feet which fit into drilled [holes](#) in each side of the Rubik's Cube.

They use four USB webcams to determine the state of the cube. The camera information is fed into a PC application running on Linux. This application determines the cube state, and feeds the data into an implementation of an algorithm for cube solving, determining a set of moves that can solve the cubes rapidly. The Arduino is involved to control highly tuned acceleration/deceleration.

All in all, remarked Eric Limer in *Popular Mechanics*, "the actual machine isn't that complicated. Like most Rubik's Cube solvers, it's just a bunch of grippers and stepper motors rigged up to a camera that can see the cube and an algorithm that can solve it." Nonetheless, Limer found their [finesse](#) impressive. "The two are in the process of getting the record officially verified, but it should be no problem as this seems like the real, speedy deal."

Cuthbertson in *Newsweek* talked about their title quest. "Flatland and Rose are in the [process](#) of applying for an official Guinness World Record," he said.

According to the Guinness World Records guidelines, the cube needs to meet the stipulations of the World Cube Association. In turn, the World

Cube Association is the group which governs competitions for all puzzles labeled as Rubik puzzles, and all other puzzles that are played by [twisting](#) the sides, so-called 'twisty puzzles'. The Rubik's Cube was invented by Prof. Rubik from Hungary. A selection of these puzzles are chosen as official events of the WCA.

In November, Rachel Swatman reported in *Guinness World Records* that "A extraordinary machine built by student Zackary Gromko (USA) has just set an all-new Guinness World Records title for the fastest time to solve a Rubik's cube, completing the incredibly complex puzzle in just 2.39 [seconds](#) at an event at Zack's school in Saint Stephens, Bradenton, Florida, USA."

Meanwhile, the latest video about this pair of record-seekers shows them in preparation and run-throughs, where the presenter takes out a cube and hand-scrambles it, as they will on competition day.

Stephanie Milot in *PCMag* reported that "the third time Flatland jumbled the colored block and covered the webcam—just as he will during a competition—the program really came through: racing to the [finish](#) line in 1.047 seconds."

Abhimanyu Ghoshal in *The Next Web* said the two are using the Kociemba algorithm to [solve](#) the puzzle.

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