

Watch a robot solve a rubik's cube in just 0.1 seconds: breaking a guinness world record

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A group of engineering students at Purdue University (USA) have successfully built the Purdubik's Cube robot, which has the ability to solve the Rubik's Cube at an "unimaginable" speed. Purdubik's Cube set a Guinness World Record when it solved the Rubik's Cube in just **0.103 seconds** - so fast you won't even have time to blink!

"Super" speed

For many people, solving a Rubik's Cube is a mental challenge. But for a group of Purdue students, it's an opportunity to push the limits of speed, accuracy, and automation to new heights.

Purdubik's Cube officially broke the record for "**World's Fastest Rubik's Cube Solving Robot**" with a time of 0.103 seconds, breaking the previous record (0.305 seconds) set by Japanese engineers at Mitsubishi in 2024.

The team of inventors, including students Junpei Ota, Aden Hurd, Matthew Patrohay and Alex Berta, not only made history but also won a Guinness World Record for this incredible engineering achievement.

It all started at Purdue's Co-op program – where Hurd, Ota and Patrohay met.

'Our team came together through Co-op,' Hurd says. 'It not only helped us connect, but it also gave us the technical skills to make our ideas a reality.'

The team invested time, internship pay, and funding to build the robot. For Patrohay, this dream has been nurtured since high school:

"In high school, I watched a video of a group of MIT students solving a Rubik's Cube in 380 milliseconds and said to myself, 'I have to break this record!'. Now Purdue has proven it!"

Breakthrough Technology: Optimize every millisecond

Purdubik's Cube was first introduced at SPARK, Purdue's Electrical and Electronics Engineering Design Competition (winning first place in December 2024). The system combines:

1. **Machine vision** recognizes Rubik's cube color.
2. **Custom algorithm optimizes** each rotation step.
3. **Industrial motion control hardware** from Kollmorgen.

Each maneuver is calculated to maximize acceleration, reduce friction, and achieve sub-millisecond accuracy . The project is also funded by Purdue University's Institute for Control, Optimization, and Networks (ICON).

Professor Shreyas Sundaram (co-director of ICON) commented:

"Since the days of Apollo, Purdue has been at the forefront of control systems development. Purdubik's Cube is a testament to that tradition – where algorithms, robotics and controls converge to create miracles."

The interesting thing is that Users can use **the Bluetooth-connected Smart Cube** to shuffle the Rubik's Cube, and the robot will react immediately. When you stop, Purdubik's Cube solves in a flash!

If the number 0.103 seconds sounds abstract? Imagine this:

1. **A human blink** : 200-300 milliseconds.
2. **Purdubik's Cube** : Solve the Rubik's Cube before you even close your eyes!

Professor Nak-seung Patrick Hyun (team advisor) emphasized:

'This achievement is more than a record – it paves the way for super-fast control systems that were previously only found in nature.'

From academic project to world record, Purdubik's Cube is more than just a Rubik's Cube-solving robot – it's a **step forward in artificial intelligence and control engineering** , continuing Purdue's tradition of innovation!

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