Watch Sony’s elite ping-pong robot beat top-ranked players

Humans have been building ping-pong playing robots for decades, such as Omron’s FORPHEUS that challenged amateur competitors at CES 2017. What sets Ace apart from the rest is that the robot, which was developed by Sony’s AI division, is the first that can hold its own against top-ranked human players and occasionally even beat them in matches that follow the official rules of the International Table Tennis Federation (ITTF).

AI is already capable of besting humans at games like Chess and Go, but physical games pose a much greater challenge as robots have to be engineered to match the speed and responsiveness of the human mind and body. To be competitive at table tennis, a particularly difficult game with a ball moving at a high speed and spin that can alter its trajectory, Sony’s researchers developed a robotic system with eight joints. Two joints control the paddle’s position, two adjust its overall orientation, and the other three enable the robot to deliver powerful shots.

Ace’s moving parts are assisted by a complicated vision system made up of nine traditional cameras surrounding the court that can locate the position of the ball in 3D space, and three “gaze control systems” that measure the ball’s angular velocity and spin so its trajectory can be accurately calculated.

In a study outlining Ace’s capabilities and achievements published in the journal, *Nature,* today, Sony says that during test matches in April 2025, the robot won three out of five matches against elite players (athletes with more than 10

years of training) and lost two matches to professional players who regularly compete in professional leagues. Sony says Ace went on to defeat professional players in December 2025 and last month, according to *Reuters*.

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