

Robotic arm simulates driving a Ferrari (w/ Video)

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In the CyberMotion Simulator, players can experience the quick and massive acceleration of driving a Ferrari. Credit: IEEE Spectrum.

Engineers have turned a robotic arm into a "Ferrari simulator," enabling users to feel what it's like to experience high-speed driving while controlling the car in a video game. As shown in the video below, players sit in the robotic arm positioned about two meters off the ground, and the arm twists and turns to simulate the car's motion.

The device, called the CyberMotion <u>Simulator</u>, was created by Paolo Robuffo Giordano and colleagues at the Max Planck Institute for



Biological Cybernetics, in Tübingen, Germany, and recently presented at the ICRA 2010 conference. Their goal was to make the experience of driving a Ferarri F2007 as realistic as possible in order to better understand how humans experience the sensation of motion, which in turn could provide insight into the cognitive processes of the brain.

The researchers also wanted to test the simulator in an environment that requires quick and massive acceleration. The CyberMotion Simulator has a delay of just 40 milliseconds, and allows players to be freely displaced in six degrees of freedom in space, including upside-down.

The <u>robotic arm</u> is a Robocoaster that the researchers modified on a sixaxis Kuka KR 500, which has the ability to lift up to 500 kg. The system is often used in amusement parks but normally does not allow users any control.

The researchers predict that the CyberMotion Simulator could be adapted to experiences in addition to car racing, such as controlling airplanes, helicopters, and ships, as well as for telepresence applications.

via: IEEE Spectrum

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