

Gaming system helps with autism diagnosis

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Autism Spectrum Disorder (ASD) is a developmental condition that affects communication, social skills and other behaviours. Characteristic of some cases in both children and adults is repetitive movements or unusual behaviour – stereotyped movements.

A research team from France and Morocco describe in the *International Journal of Biomedical Engineering and Technology*, an automated [detection system](#) for diagnosing stereotyped movements that uses the motion detector system of the "Kinect" video game. The Kinect system is based on a webcam type peripheral computer device that allows the player to control the computer through movements and gestures (as well as spoken commands via a microphone input). The Kinect was originally an add-on for Microsoft's Xbox gaming console.

The team of Maha Jazouli of Sidi Mohamed Benabdellah University, in Fez, Morocco, and colleagues have used a \$P Point-Cloud Recogniser to identify multi-stroke gestures as point clouds as recorded by the webcam component of the Kinect and its processing system for gesture and movement determination. Their

new methodology can automatically detect five stereotypical motor movements: body rocking, hand flapping, finger flapping, hand on the face, and hands behind back.

The researchers report that for many people with ASD tested using this system, satisfactory results were obtained in identifying stereotyped movements. They suggest that the system might be used in a [clinical setting](#) or in the home as a temporary smart surveillance system to augment early diagnosis of ASD by expert clinicians.

More information: Maha Jazouli et al. Automatic detection of stereotyped movements in autistic children using the Kinect sensor, *International Journal of Biomedical Engineering and Technology* (2019). [DOI: 10.1504/IJBET.2019.097621](https://doi.org/10.1504/IJBET.2019.097621)

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