Autism detection system posts impressive results

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An artificial intelligence system jointly developed by the 3rd Affiliated Hospital of Sun Yat-sen University in Guangzhou and the Duke Kunshan University has achieved an 80 percent accuracy rate in screening 120 toddlers who were diagnosed with autism, the team behind the system said during a forum at DKU last week.  
The system represents a major development in autism screening for children, which is considered a challenge in China due to the lack of experienced pedestrians who can perform an accurate diagnosis. Experts say that early detection and intervention could substantially improve the prognosis of patients.  
China has more than 10 million children with autism. In the US, the estimated autism prevalence in 2018 is one in 59.  
"It's quite hard for doctors to tell whether a two-year-old is autistic or not as there is no single cause for identification or a biomarker," said Zou Xiaobin, director of Child Behavior Development Center of the 3rd Affiliated Hospital of Sun Yat-sen University.  
"A diagnosis is completely reliant on a doctor's observation of the toddler's behavior."  
The AI system was tested on 120 two-year-olds between last year and early this year.  
The toddlers were accompanied by their mothers in a room and their behaviors were recorded and analyzed by audio and video systems.  
Eye-tracking technology was also used. Doctors said that unlike normal children, an autistic child lacks the ability to pay attention to people's eyes.  
A number of indicators were included in the system for the screening, said Li Ming, associate professor of electrical and computer engineering at DKU who is responsible for the development of the AI system.  
The indicators include whether the toddlers responded by raising their heads or answering when they were called by their names, whether they gazed at their mothers or stood up to follow when their mothers left the room, and whether they made eye contact or followed their mothers' visual cues, Li said.  
Li said he was confident that the accuracy rate will be improved by at least 10 percent following upgrades to the machine learning system and data processing technology.  
"Obtaining a bigger pool of samples is crucial as well. The more the machine learns, the higher its accuracy will be," Li said.

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