

- Mental illness

Artificial intelligence can help diagnose mental health disorders

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Artificial intelligence, or AI, may be able to screen people for mental health disorders without the need for a specialist's assessment, a study published Friday by GigaScience found.

In the analysis, the machine learning approach developed by researchers at the French Institute for Research in Computer Science and Automation, which relies on "proxy measures" for mental health, provided an accurate diagnosis up to about 90 percent of the time, the data showed.

Based on their findings, psychologists and machine learning models could work hand-in-hand in the future to provide personalized mental assessments, the researchers said.

For example, clients or patients could grant a machine learning model secured access to their social media accounts or their mobile phone data to then return useful proxy measures to aid specialists in diagnosis, they said.

However, while AI can provide much needed assessment tools, human interaction will still be essential, according to the researchers.

Other AI-based approaches have used a person's social media data to diagnose mental health problems.

"What is not going to change is that mental health practitioners will need to carefully interpret and contextualize test results on a case-by-case basis and through social interaction," lead researcher Denis Engemann said in a press release.

This would be the case "whether they are obtained using machine learning or classical testing," said Engemann, an experimental psychologist and research scientist at the French Institute for Research in Computer Science and Automation.

The prevalence of mental health and substance abuse disorders increased 13 percent globally between 2007 and 2017, the most recent year with figures available, according to the World Health Organization.

Many people around the world lack access to specialists who can provide a diagnosis and guide treatment, Engemann and his colleagues said.

Machine learning technology designed to facilitate mental-health assessments could provide much needed alternatives to help detect, prevent and treat such health issues, they said.

To develop AI models sensitive to mental health, Engemann and his colleagues used information for more than 500,000 adults from the U.K. Biobank, a database of medical

reports and questionnaire responses gauging personal statistics and behaviors.

In addition to information on patient age, education, tobacco and alcohol use, sleep duration and physical exercise, questionnaire responses used in this study also included sociodemographic and behavioral data, such as moods and sentiments.

The data also included magnetic resonance imaging, or MRI, brain scans for more than 10,000 participants, the researchers said.

The researchers combined these two data sources to build models that approximate measures for brain age, and scientifically defined intelligence and neuroticism traits, or a person's tendency toward anxiety, depression, self-doubt and other negative feelings.