Facebook, NYU team up to make MRI scans faster through AI
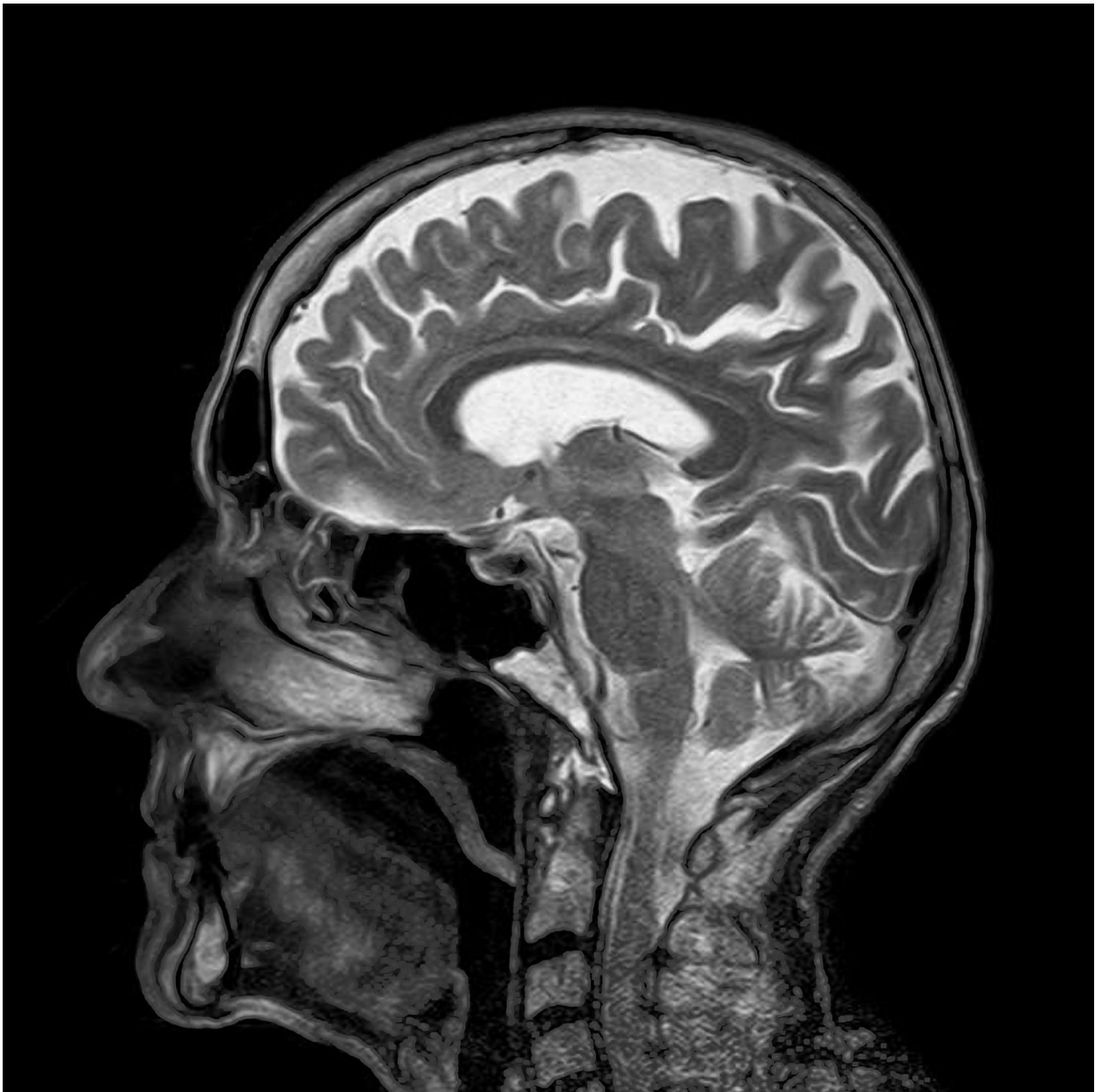
August 21 2018, by Mike Snider, Usa Today

Facebook is working with the NYU School of Medicine to shorten the length of time patients must spend in MRI scanners.

Facebook's Artificial Intelligence Research (FAIR) group and the medical school's radiology department are investigating whether artificial intelligence can make magnetic resonance imaging scans up to 10 times faster.

Such a development would not only reduce patient discomfort – scans can last 15 minutes to an hour – but also free up MRIs for more patients. "If this effort is successful, it will make MRI technology available to more people, expanding access to this key diagnostic tool," the research team says in a blog post on the Facebook website.

In the fastMRI project, researchers are using 3 million MRI images of the brain, liver and knees from 10,000 cases collected by the NYU School of Medicine. All patient identifiers were removed from the medical images – and no Facebook data from patients is used.

The AI first learns how to do MRIs as they are currently processed, with multiple scans of the body that are combined to make images used in diagnoses. Next, tests will be done to see whether AI can achieve similar results more quickly with smarter scans that capture less data. "The key is to train artificial neural networks to recognize the underlying structure of the images in order to fill in views omitted from the accelerated scan," the researchers said.

Early findings suggest AI can generate scans from less data than previously needed, the researchers say.

Should the research be successful, the findings could trim long scan times, an important development for patients. "These long scan times can make MRI machines challenging for young children, as well as for people who are claustrophobic or for whom lying down is painful," they said in the report.

Faster MRI scans could be used instead of X-rays and CT scans for patients, letting them avoid radiation exposures. Beyond that, faster usage of MRIs would help reduce the current scheduling backlog for the scanners. "By boosting the speed of MRI scanners, we can make these devices accessible to a greater number of patients," the researchers said.

Research in artificial intelligence has been burgeoning at Facebook. AI has helped the network remove terrorist content from the platform faster than human experts can.

Other initiatives have been even more futuristic. There's the "direct brain interface," revealed last year, which would let people type 100 words per minute with their brain.

In another notable project, last year Facebook ended an experiment in which it trained bots to negotiate. At one point, the AI developed their own way of communicating, which was tough for researchers to decipher, so they shut down the conversation.

While sci-fi movie buffs immediately thought of Skynet, the all-powerful AI in "The Terminator" movies, Facebook said there was no reason to be concerned.

Most patients would welcome benefits from this newest line of research – as long as a vengeful AI doesn't get control of the MRI scanner itself.

©2018 USA Today