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AI has the Potential to Increase Accessibility of MRI to More Patients

According to a recent study published in Radiology, AI can reconstruct coarsely-sampled, fast MRI scans into high-quality images with diagnostic value that is close to those created using standard MRI. The study is part of the fast MRI initiative established by NYU Langone Health and Meta AI Research in 2018.

Reconstructing MRI imaging with AI means MRI images can be made available to more patients as they are four times faster than standard scans. In turn, this reduces waiting times for appointments.

The team worked to make MRI faster using AI, which resulted in jointly developing an AI model. It also produced the largest collection of raw MRI data which researchers and developers have used in various fields.

In an earlier "proof-of-principle" study, the team removed about three-fourths of the raw data collected from traditional, slow MRI scans. The fast MRI AI model then produced images that were indistinguishable to those generated from the slower scans. Using only one-fourth of the total data, researchers in this study performed accelerated scans using the AI model to fill in the missing information.

Dr. Michael P. Recht, chair of the Department of Radiology at NYU Grossman School of Medicine, said,"Our new study translates the results from the earlier laboratory-based study and applies it to actual patients. Fast MRI has the potential to dramatically change how we do MRI and increase accessibility of MRI to more patients".

In a new study, 170 patients received a diagnostic knee MRI using a conventional MRI protocol followed by an accelerated AI protocol. Radiologists reviewed each examination, unaware of which images were reconstructed with AI. The radiologists found AI reconstructed images to be of equivalent diagnostic value to those generated by standard MRI scans. Further, they concluded that the overall image quality of the faster scans was significantly better than the conventional images.

Prof.M.Johnson concluded, “This research represents an exciting step towards translating AI accelerated imaging to clinical practice. It truly paves the way for more innovation and advancements in the future”.

Source: Radiology

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