

Artificial Intelligence Based Analysis of Magnetic Resonance Signals for the Diagnosis of Tissue Abnormalities

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Abstract : In this study, an artificial intelligence-based approach is developed to diagnose abnormal tissues in human or animal bodies by analyzing magnetic resonance signals. As opposed to the conventional method of generating an image from the magnetic resonance signals, which are then evaluated by a radiologist for the diagnosis of abnormalities, in the discussed approach, the magnetic resonance signals are analyzed by an artificial intelligence algorithm without having to generate or analyze an image. The AI-based program compares magnetic resonance signals with millions of possible magnetic resonance waveforms which can be generated from various types of normal tissues. Waveforms generated by abnormal tissues are then identified, and images of the abnormal tissues are generated with the possible location of them in the body for further diagnostic tests.

Keywords : magnetic resonance, artificial intelligence, magnetic waveform analysis, abnormal tissues

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