Assignment-4

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TOPIC- Image Analysis For Radiology

Role of AI

Recent advances in computer vision are set to revolutionize the field of medical imaging, which in turn extends across many different healthcare functions.

In radiology, doctors analyze image sets gathered from, e.g., Computed Tomography (CT) scans, Magnetic Resonance Imaging (MRI), ultrasounds, PET scans, and mammography.

Doctors performed the first CT scan of a human brain in 1971. Harvard Medical School reports that today over 80 million CT scans are performed each year. That's a lot of pictures to examine by hand, requiring immense amounts of hospital resources to detect diseases, much less detect them in real-time.

AI-assisted imaging technologies expand the ability to analyze these images through pattern recognition. They can help doctors by highlighting certain image features, identify early predictors of cancer, prioritize cases and cut down on the volume of labor required to perform accurate diagnoses.

Training machine learning models on mountains of imaging data optimizes them to detect microscopic anomalies and inconsistencies that indicate the presence of ailments.

CureMetrix is a San-Diego based company that uses advanced machine learning, natural language understanding (NLU), and computer vision technology to assist radiologists in analyzing mammograms for cancer detection.

The company's use of complex neural networks and disparate sources of training data, including doctor reports and a large database of mammograms, resulted in successful detection of breast cancer up to 6 years earlier than human doctors and enabled a 70

CureMetrix produced such high efficacy in mammogram analysis that the FDA created a new code for their cmTriage (™) platform breast cancer detection driving others to use them as a predicate.

The success of their solution has drawn the attention of some of the most renowned healthcare institutions in the world including MD Anderson, the Mayo Clinic, and Dasa from Brazil.