

# Artificial Intelligence in Radiology in Pakistan; Pros and Cons

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**KEYWORDS:** AI: Artificial Learning; ALS: Amyotrophic Lateral Sclerosis; DL: Deep Learning; PIAIC: President Initiative for Artificial Intelligence and Computing

**ABBREVIATIONS:** Artificial intelligence; Machine learning; Deep learning; Supervised learning; Unsupervised learning; Artificial intelligence in radiology

## LETTER-TO-EDITOR

Dear Editor,

Artificial Intelligence (AI) is a computer-based software to analyze data (signs, symptoms, images etc.) with the machines in a way (algorithms) that can mimic the human cognitive functions to optimize problem solving [1]. Ever since the development of the Computer Assisted Detection (CAD), AI has come a long way. Machine learning (ML: linear algorithms) and Deep Learning (DL; Artificial neural connection inspired network) are the two major subsets employed in problem solving. In radiology AI has aided in a few different diagnoses that include more accurate detection of breast cancers (from 75.3%-85.8%) [2], classifying most common posterior fossa brain tumors (wait time from 40 minutes for pathology down to 3 minutes) [3], detection of neurodegenerative diseases (ALS, Alzheimer's, Parkinson's) in under 10 seconds, finding out hidden fractures [4] etc. The role of DL has specially been remarkable in Radiology [5]. With the 4th industrial revolution and PIAIC initiative, Pakistan is looking forwards to deploy AI in different fields including the health sector. AI may look promising but is sure to pose challenges [6]. Health economics in a low-income country like us, must first be considered across all the

departments that employ radiology, and hence the AI. We may need to find the answer to the question that if machines make decisions independently, then who is to blame for wrong decisions. Also, it raises many questions ethically [7] on using and selling the data with little or no consent. Medical decisions require understanding and empathy to reach a shared goal, the treatment plan. Weighing the pros and cons, AI should be used more as a supplemental rather than replacement tool.

## AUTHORS CONTRIBUTION

All authors contributed for the manuscript.

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