THE EVOLUTION OF RADIOLOGY

1895

Wilhelm Conrad Roentgen discovers X-rays in 1895, and is awarded the Nobel Prize in physics in 1901. The first image captured was of his wife's hand, showing its skeletal outline with a ring on one of her fingers.

1946

Nuclear magnetic resonance (NMR) is discovered independently by American physicists, Edward Purcell and Felix Bloch.

1961

The first single-plane positron emission tomography (PET) scan is built by American James Robertson.

1971

English electrical engineer, Godfrey Hounsfield, develops first clinical prototype of CT scanner.

1977

American physicians, Raymond Damadian, Larry Minkoff and Michael Goldsmith, complete the first MRI.

1989

Spiral/Helical CT scanning is introduced, allowing for continuous data acquisition and 3D imaging.

1991

The first functional MRI (fMRI) of the brain is conducted by Belliveau et al.

1998

Multi-slice CT scanners are introduced, dramatically increasing scanning speed and resolution.

1998

The FDA clears the first AI algorithm for radiology, M1000 IMAGECHECKER by Hologic Inc. A CAD tool to help radiologists detect breast cancer on mammograms.

2002

64-slice CT scanners become available, enabling detailed cardiac imaging.

2005

3 Tesla MRI machines become widely available for clinical use, offering higher resolution imaging.

2007

320-slice CT scanner is introduced by Toshiba, enabling whole-organ imaging in a single rotation.

2011

Early adoption of machine learning in medical imaging with the introduction of automated lung nodule detection algorithms.

2016

Deep learning models such as convolutional neural networks (CNNs) begin showing high performance in medical image classification tasks, primarily in detecting lesions and organ segmentation.

2017

There is a notable uptake in FDA cleared AI algorithms, with 26 algorithms receiving FDA clearence in 2017, compared to 18 in 2016, 6 in 2015, 6 in 2014, 3 in 2013, 3 in 2012 and 15 since 1998.

2017

First 7 Tesla MRI scanner receives regulatory approval for clinical use, which is cleared for clinical use in the United States in 2019.

2020

Photon-counting CT scanners begin clinical implementation, offering better tissue differentiation and lower radiation doses.

2023

The U.S. Food and Drug Administration (FDA) has cleared 843 AI healthcare algorithms, with more than 765 (645) pertaining to radiology