



Jewish General Hospital
Lady Davis Institute for Medical Research



"Deep Learning Reconstruction in CT Imaging: A Comprehensive Review for Medical Physicists and Radiologists"

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Abstract

This seminar provides a general overview of Deep Learning Reconstruction (DLR) in the context of CT imaging. The presentation will commence by identifying the limitations of traditional reconstruction algorithms such as Filtered Back Projection (FBP) and Iterative Reconstruction (IR), outlining the technical constraints and artifacts associated with these methods. Subsequently, the seminar will delve into the technical approaches of DLR, explaining the methods of training these algorithms. The discussion will also feature an analysis of two exemplary papers that have evaluated the performance of DLR in cardiovascular and abdominal imaging. Special attention will be devoted to the application of deep learning algorithms in the reduction of metal artifacts. The seminar will conclude with an exploration of the ongoing challenges and future prospects of DLR. The aim is to equip medical physicists, radiologists, and technologists with a nuanced understanding of the advancements, limitations, and future potential of DLR.

