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Concepts of synthetic imaging

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Concepts of synthetic imaging
Basic reconstruction techniques for 3D medical imaging rely on pixelized measurements of a signal, including photon transmission and RF signals. The reconstruction methods convert the signals into a grayscale or color coded 3D map of the human anatomy. Historically, the reconstruction methods have used basic physics and mathematics to provide the analytically reconstructed 3D medical images. In addition to the analytic reconstruction methods, multiple methods have been proposed to map values from one image or data set to another and create a synthetic image. The recent rise of machine learning tools has provided additional methods for the reconstruction of 3D medical images. The departure from the analytic algorithms has allowed for the creation of synthetic 3D medical images in multiple contexts, including DR, CT, CBCT, MR, and PET, and for multiple purposes.

Summary

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