Redefining MRI:
From Image to Insight

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Breast 2

SY10-3

Synthetic Contrast-Enhanced MRI Using Deep Learning

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Breast dynamic contrast-enhanced magnetic resonance imaging (DCE-MRI) is a sensitive imaging technique critical for breast cancer diagnosis. However, the administration of contrast agents poses a potential risk. This can be avoided if contrast-enhanced MRI can be obtained without using contrast agents. Thus, we aim to generate T1-weighted contrast-enhanced MRI (ceT1) images from pre-contrast T1 weighted MRI (preT1) images in the breast using various deep learning methods including generative adversarial methods. Time permitting, we will also introduce recent diffusion based generative methods as well.

Keywords: *Breast magnetic resonance imaging, Adversarial learning, Image synthesis, Generative models, Contrast agents*