Thesis Proposal: Conditioning of DDPMs on Accelerated MRI

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1 Background

Data acquisition in magnetic resonance imaging (MRI) takes a long time and reducing this acquisition time has been a long standing research problem for the following reasons:

1. MRI machines could perform more scans, driving down the cost per patient, and opening up diagnosis with MRI for a larger number of patients.

2. Better performance on dynamic imaging, since the temporal resolution could be increased.

3. Higher patient comfort and less unsuccessful scans due to patient motion.

Recently, methods using undersampling of Fourier space have received much attention and with the rise of generative deep learning [1]

2 The Thesis Project

3 Project Schedule

4 Supervisor and Support

References

[1] Diederik P Kingma and Max Welling. *Auto-Encoding Variational Bayes.* 2022. arXiv: 1312.6114 [stat.ML].