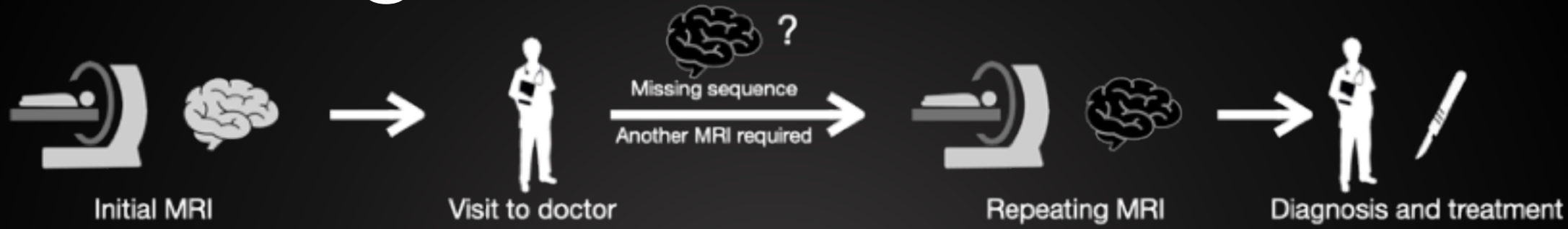
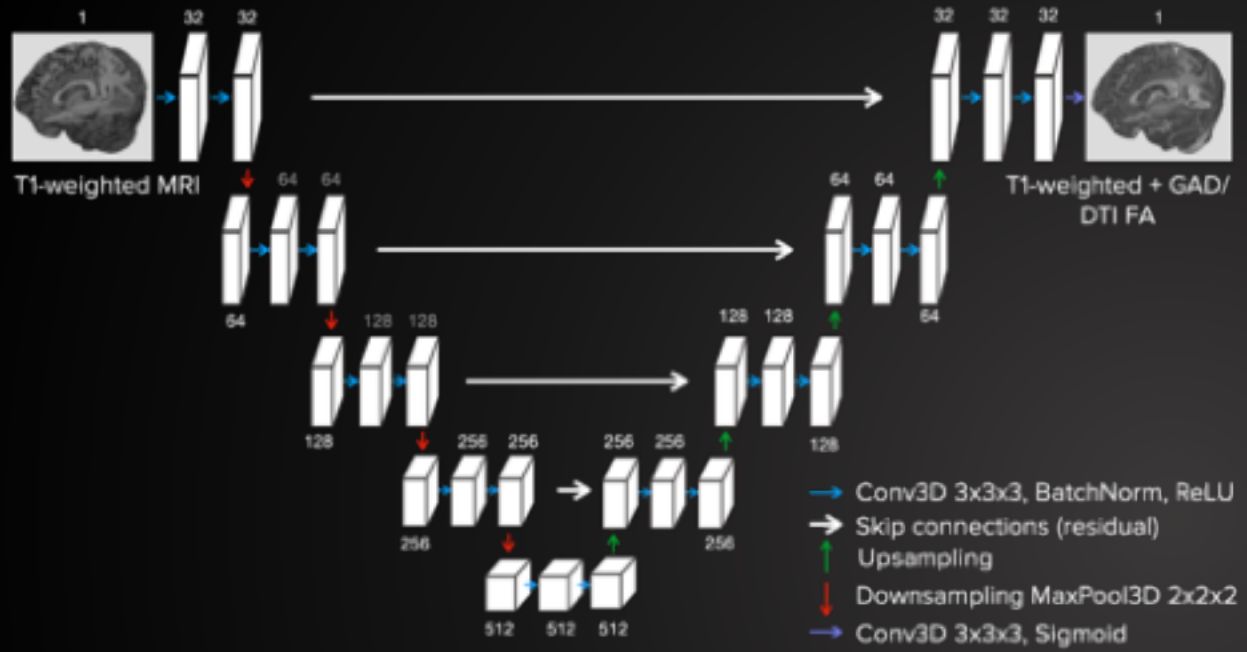
Challenge



- MRI techniques and parameters vary across scanners
- Missing sequences require additional acquisition
- Increased cost of procedures, delay in diagnosis and treatment

Solution: an artificial intelligence (AI)-based approach to Magnetic Resonance (MR) data synthesis. We use existing acquired contrast-free T1-weighted (T1w) images to generate missing Diffusion Tensor Imaging Fractional anisotropy (DTI FA) and contrast-enhanced T1 (T1c) data

Methods



- Model - 3D UNet
- Batch size: 2
- Learning Rate: 0.0001
- Dropout Rate: 0.15
- Number of epochs: 150
- Loss: L1+SSIM
- Datasets:
  - BraTS2021 (n=1432)
  - AOMIC ID1000 (n=916)