

Data Augmentation

Geometric Transforms

Rotation, flipping, scaling, elastic deformations. Must respect anatomical constraints

Intensity Transforms

Contrast adjustment, brightness, gamma correction. Simulates different scanner protocols

MixUp/CutMix

Mixing training examples. Creates synthetic samples for better generalization

Medical-Specific

Domain knowledge augmentation: simulating pathology, artifacts, different imaging protocols

Test-Time Augmentation

Multiple predictions on augmented test images. Ensemble for improved robustness