SA-CycleGAN-2.5D Training Configuration

Hyperparameters:

Epochs: 100

Batch size: 8

Image size: 128×128

Learning rate: 2×10^{-4}

Optimizer: Adam ($\beta_1 = 0.5$, $\beta_2 = 0.999$)

LR schedule: Cosine annealing

Warmup epochs: 5

Loss Weights:

$\lambda_{\text{cycle}} = 10.0$

$\lambda_{\text{identity}} = 5.0$

$\lambda_{\text{SSIM}} = 1.0$

$\lambda_{\text{gradient}} = 1.0$

Model Architecture:

Generator: ResNet-based (9 blocks)

Base filters: 64

Self-attention: in bottleneck

CBAM: after each ResBlock

Discriminator: Multi-scale PatchGAN

Total parameters: 35.1M

Training Statistics:

Training samples: 42,110

Validation samples: 5,263

Test samples: 5,265

Batches per epoch: 5,264

Total iterations: 526,400

Training time: $\sim$85 hours

Hardware: RTX 6000 (24GB)

Data Augmentation:

Random horizontal flip

Random rotation (± 10)

Gaussian noise

Intensity jittering

Regularization:

Gradient clipping: L2 norm ≤ 1.0

Instance normalization

Spectral normalization (discriminator)

Replay buffer size: 50