

Part 3/6: Training Algorithm

Practical Tips

1 Data & Activation

- ✓ Normalize inputs to `[-1, 1]`
- ✓ Use `tanh` activation for generator output
- ✓ `LeakyReLU` in D, `ReLU` in G

2 Normalization & Regularization

- ✓ Batch normalization (except last G, first D layer)
- ✓ Label smoothing: `real=0.9, fake=0.1`
- ✓ Add noise to discriminator inputs

3 Optimization

- ✓ Use Adam optimizer with $\beta_1 = 0.5$

Architecture Guide

Generator

- Dense/Conv Layers
- ReLU
- Batch Norm
- ...
- No BN (Last Layer)
- tanh Output

Discriminator

- No BN (First Layer)
- LeakyReLU
- Batch Norm
- ...
- LeakyReLU
- Sigmoid Output

⚠ Monitoring

Watch D loss carefully - if it drops to 0, G won't learn properly

✓ Recommended Optimizer

✓ Monitor D loss - shouldn't go to 0

Adam with $\beta_1 = 0.5$, $\beta_2 = 0.999$

Interactive Practice

Try GAN Lab →