CycleGAN Project: Zeroth Evaluation

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Overview

- Project: CycleGAN for Image-to-Image Translation
- Framework: PyTorch
- Goal: Learn unpaired translation between two domains
- Evaluation: Zeroth presentation (project not yet started)

Basic Architecture

Generator:

- Initial block: ReflectionPad2d, Conv2d, InstanceNorm2d, ReLU
- Downsampling: 2 Conv2d layers (channels double)
- Residual blocks: typically 6–9
- Upsampling: 2 ConvTranspose2d layers (channels halve)
- Output: ReflectionPad2d, Conv2d, Tanh

Discriminator:

- Sequence of Conv2d layers (InstanceNorm2d, LeakyReLU)
- PatchGAN style output for local realism scoring

Number of Parameters

- Both generator and discriminator have millions of parameters
- Exact number depends on architecture and image size
- Typical CycleGAN: 10–60 million parameters
- Will calculate exact count after model instantiation

Dataset Description

Unpaired Image Domains:

- Examples: horse2zebra, monet2photo, apple2orange
- Each domain has train and test split:
  - trainA/, trainB/
  - testA/, testB/
- Data is not paired; images are independent

Evaluation Metric

- Visual inspection of generated images
- Track GAN loss, cycle-consistency loss, identity loss during training
- Optionally: FID, Inception Score for quantifiable quality
- For initial evaluation, focus on loss clarity and qualitative results

Thank You!