DCGAN Architecture for Synthetic Dark-Skin Image Generation

Generator

z ~ N(0,1)
100-dim

Dense
8×8×256

BatchNorm
LeakyReLU

Reshape
(8, 8, 256)

Conv2DTranspose
128, 5×5, s=2
(16, 16, 128)

BatchNorm
LeakyReLU

Conv2DTranspose
64, 5×5, s=2
(32, 32, 64)

BatchNorm
LeakyReLU

Conv2DTranspose
3, 5×5, s=2, tanh
(64, 64, 3)

Discriminator

64×64×3
RGB Image

Conv2D
64, 5×5, s=2

LeakyReLU
Dropout(0.3)

Conv2D
128, 5×5, s=2

LeakyReLU
Dropout(0.3)

Flatten

Dense(1)
Logits

Real/Fake
Classification

Training Configuration:
• 40 dark-skin training images
• 400 epochs, Batch size: 32
• Adam optimizer (lr=1e-4)
• Binary cross-entropy loss
• Output: 3,500 synthetic images (500 per class)