

Questions on Generative Models

1. What are generative models?
2. How do generative models differ from discriminative models?
3. What is the basic architecture of a Generative Adversarial Network (GAN)?
4. What roles do the generator and discriminator play in a GAN?
5. Can you name some practical applications of GANs?
6. What is the BCE cost function and its relevance in training GANs?
7. Describe the training process of a GAN.

Advanced Questions on Binary Cross Entropy (BCE)

1. How does the BCE loss function mathematically represent the loss between predictions and actual labels?
2. Why is BCE particularly suitable for the training of a discriminator in GANs?
3. What are the implications of the BCE loss function's behavior near the boundaries of the prediction interval $[0,1]$?
4. Can the BCE loss function lead to saturation, and how does this affect the training of neural networks?
5. How might modifications to the standard BCE loss function improve the stability of training GANs?
6. Discuss the impact of batch size on the effectiveness of the BCE loss during training.