

## Course outline

## About NPTEL

## How does an NPTEL online course work?

## Week 0

## Week 1

## Week 2

## Week 3

## Week 4

## Week 5

## Week 6

## Week 7

## Week 8

## Week 9

## Week 10

## Week 11

☐ Introduction to Diffusion Models and DDPMs - Part 1

☐ Introduction to Diffusion Models and DDPMs - Part 2

☐ Classifier and Classifier-Free Diffusion Guidance

☒ Lecture materials

☒ Quiz: Week 11: Assignment 11

☒ Week 11 Feedback Form : Deep Learning for Computer Vision

## Week 12

## Download Videos

## Live Session

## Text Transcripts

## Books

## Problem Solving Session - July 2024

## Week 11: Assignment 11

The due date for submitting this assignment has passed.

Due on 2024-10-09, 23:59 IST.

## Assignment submitted on 2024-10-09, 17:36 IST

## Instructions:

- Starter code for this assignment is provided in [DL4CV-Prog-Assignment6-Week-11-2024.ipynb](#).
- Use Python 3.x to run the notebook. As instructed in the notebook,

write your code only in between the lines "YOUR CODE STARTS HERE" and "YOUR CODE ENDS HERE".

- Do not change anything else in the code; if you do, the answers you are supposed to get at the end of this assignment might be wrong.
- Read documentation of each function carefully.
- All the best!

1) For this question, please see Question 1 in the iPython notebook (.ipynb file) provided alongside. Complete your implementation under the "YOUR CODE STARTS HERE" segment therein. What is the value of  $z$ ? (Select the closest option) **1 point**

- ☒  $z = [-1.1450, 1.5405]$   
☐  $z = [-1.2653, 1.5955]$   
☐  $z = [-0.0293, 0.3905]$   
☐  $z = [-0.1337, 0.4419]$

Yes, the answer is correct.  
Score: 1

Accepted Answers:  
 $z = [-1.1450, 1.5405]$ 

2) For this question, please see Question 2 in the iPython notebook (.ipynb file) provided alongside. Complete your implementation under the "YOUR CODE STARTS HERE" segment therein. What is the value of mean of  $x$  recon? (Select the closest option) **1 point**

- ☐ 0.1  
☐ -0.1  
☒ 0.5  
☐ -0.5

Yes, the answer is correct.  
Score: 1

Accepted Answers:  
0.5

3) For this question, please see Question 3 in the iPython notebook (.ipynb file) provided alongside. Complete your implementation under the "YOUR CODE STARTS HERE" segment therein. Which of the following is true? **1 point**

- ☐ Generator Loss = Discriminator loss  
☒ Generator loss < Discriminator loss  
☐ Generator loss > Discriminator loss

Yes, the answer is correct.  
Score: 1

Accepted Answers:  
Generator loss < Discriminator loss

4) For this question, please see Question 4 in the iPython notebook (.ipynb file) provided alongside. Complete your implementation under the "YOUR CODE STARTS HERE" segment therein. What is the value of Alpha Cumulative Product at Timestep 999? (Select the closest value) **1 point**

- ☐  $10^{-1}$   
☐  $10^{-3}$   
☒  $10^{-5}$   
☐  $10^{-7}$

Yes, the answer is correct.  
Score: 1

Accepted Answers:  
 $10^{-5}$ 

5) For this question, please see Question 5 in the iPython notebook (.ipynb file) provided alongside. Complete your implementation under the "YOUR CODE STARTS HERE" segment therein. What is the value for  $x[999][500]$ ? **1 point**

- ☐ 1.5  
☒ -1.5  
☐ 2.5  
☐ -2.5

Yes, the answer is correct.  
Score: 1

Accepted Answers:  
-1.5

6) For this question, please see Question 6 in the iPython notebook (.ipynb file) provided alongside. Complete your implementation under the "YOUR CODE STARTS HERE" segment therein. What is the mean at last time step of Forward process?(Select the closest value) **1 point**

- ☒ 0  
☐ 0.25  
☐ 0.5  
☐ 1

Yes, the answer is correct.  
Score: 1

Accepted Answers:  
0
