



## Overview

Week 1

Week 2

Week 3

Week 4

Grades

Notes

Discussion Forums

## Week 4

Generative Deep Learning with TensorFlow

### Week 4

Discuss the topic here.

4 threads · Last post 11 days ago

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### Week 4: GANs



This week, you'll learn about GANs. You'll learn what they are, who invented them, their architecture and how they vary from VAEs. You'll get to see the function of the generator and the discriminator within the model, and the concept of 2 training phases and the role of introduced noise. Then you'll end the week building your own GAN that can generate faces! How cool is that!

[^ Less](#)

### Learning Objectives

- Design your first GAN architecture
- Train a GAN
- Build your first GAN
- Build a DCGAN on Fashion MNIST
- Build a face generator GAN on the Celebrity dataset

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### What are GANs?


**Video:** Introduction 3 min[Resume](#) **Reading:** Reference: GANs Specialization 10 min **Video:** First GAN Architecture 3 min **Reading:** Reference: Self-Normalizing Neural Networks 10 min **Video:** First GAN Training Loop 4 min **Lab:** First GAN 1h


### Deep GANs

**Video:** DCGANs 3 min **Reading:** Reference: - Unsupervised Representation Learning with Deep Convolutional Generative Adversarial Networks , tf.keras.layers.LeakyReLU 10 min


 **Lab:** First DCGAN 1h

 **Video:** Face Generator 6 min

 **Video:** Face Generator Discriminator 2 min


 **Reading:** Reference: Layer Normalization 10 min

 **Lab:** CelebA GAN Experiments 1h

 **Video:** Conclusions 1 min


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## Week 4 Quiz: GANs

 **Quiz:** GANs 8 questions Due Apr 12, 1:59 AM CDT

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## Assignment: Generate Hands with GANs

 **Programming Assignment:** Generated Hands 1h Due Apr 12, 1:59 AM CDT

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## Course Resources

 **Reading:** References 10 min

 **Reading:** What next? 10 min

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## Acknowledgments

 **Reading:** Acknowledgments 10 min