

















StyleGAN and Advancements

-  **Video:** Welcome to Week 3
53 sec
-  **Video:** GAN Improvements
7 min
-  **Video:** StyleGAN Overview
8 min
-  **Video:** Progressive Growing
5 min
-  **Video:** Noise Mapping Network
6 min
-  **Video:** Adaptive Instance Normalization (AdaIN)
8 min
-  **Video:** Style and Stochastic Variation
8 min
-  **Video:** Putting It All Together
2 min
-  **Programming Assignment:** Components of StyleGAN
3h
-  **Lab:** (Optional) Components of StyleGAN2
1h
-  **Lab:** (Optional) Components of BigGAN
1h
-  **Reading:** (Optional) The StyleGAN Paper
1h 20m
-  **Reading:** (Optional) StyleGAN Walkthrough and Beyond
30 min
-  **Reading:** (Optional Notebook) Finetuning



Works Cited

All of the resources cited in Course 2 Week 3, in one place. You are encouraged to explore these papers/sites if they interest you! They are listed in the order they appear in the lessons.

From the videos:

- Generative Adversarial Networks (Goodfellow et al., 2014): <https://arxiv.org/abs/1406.2661>
- Unsupervised Representation Learning with Deep Convolutional Generative Adversarial Networks (Radford, Metz, and Chintala, 2016): <https://arxiv.org/abs/1511.06434>
- Coupled Generative Adversarial Networks (Liu and Tuzel, 2016): <https://arxiv.org/abs/1606.07536>
- Progressive Growing of GANs for Improved Quality, Stability, and Variation (Karras, Aila, Laine, and Lehtinen, 2018): <https://arxiv.org/abs/1710.10196>
- A Style-Based Generator Architecture for Generative Adversarial Networks (Karras, Laine, and Aila, 2019): <https://arxiv.org/abs/1812.04948>
- The Unusual Effectiveness of Averaging in GAN Training (Yazici et al., 2019): <https://arxiv.org/abs/1806.04498v2>
- Progressive Growing of GANs for Improved Quality, Stability, and Variation (Karras, Aila, Laine, and Lehtinen, 2018): <https://arxiv.org/abs/1710.10196>
- StyleGAN - Official TensorFlow Implementation (Karras et al., 2019): <https://github.com/NVlabs/stylegan>
- StyleGAN Faces Training (Branwen, 2019): <https://www.gwern.net/images/gan/2019-03-16-stylegan-facestraining.mp4>
- Facebook AI Proposes Group Normalization Alternative to Batch Normalization (Peng, 2018): <https://medium.com/syncedreview/facebook-ai-proposes-group-normalization-alternative-to-batch-normalization-fb0699bffa7>