

















Image-to-Image Translation with Pix2Pix

-  **Video:** Welcome to Week 2
50 sec
-  **Video:** Image-to-Image Translation
5 min
-  **Video:** Pix2Pix Overview
4 min
-  **Video:** Pix2Pix: PatchGAN
1 min
-  **Video:** Pix2Pix: U-Net
8 min
-  **Video:** Pix2Pix: Pixel Distance Loss Term
3 min
-  **Video:** Pix2Pix: Putting It All Together
2 min
-  **Video:** Pix2Pix Advancements
2 min
-  **Programming Assignment:** U-Net
3h
-  **Programming Assignment:** Pix2Pix
3h
-  **Reading:** (Optional) The Pix2Pix Paper
1h
-  **Reading:** (Optional Notebook) Pix2PixHD
1h
-  **Reading:** (Optional Notebook) Super-resolution GAN (SRGAN)
1h
-  **Reading:** (Optional) More Work Using PatchGAN



Works Cited

All of the resources cited in Course 3 Week 2, 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:

- DeOldify... (Antic, 2019):
<https://twitter.com/citnajt/status/1124904251128406016>
- pix2pixHD (Wang et al., 2018):
<https://github.com/NVIDIA/pix2pixHD>
- [4k, 60 fps] Arrival of a Train at La Ciotat (The Lumière Brothers, 1896) (Shiryaev, 2020): <https://youtu.be/3RYNThid23g>
- Image-to-Image Translation with Conditional Adversarial Networks (Isola, Zhu, Zhou, and Efros, 2018):
<https://arxiv.org/abs/1611.07004>
- Pose Guided Person Image Generation (Ma et al., 2018):
<https://arxiv.org/abs/1705.09368>
- AttnGAN: Fine-Grained Text to Image Generation with Attentional Generative Adversarial Networks (Xu et al., 2017):
<https://arxiv.org/abs/1711.10485>
- Few-Shot Adversarial Learning of Realistic Neural Talking Head Models (Zakharov, Shysheya, Burkov, and Lempitsky, 2019):
<https://arxiv.org/abs/1905.08233>
- Patch-Based Image Inpainting with Generative Adversarial Networks (Demir and Unal, 2018):
<https://arxiv.org/abs/1803.07422>
- Image Segmentation Using DIGITS 5 (Heinrich, 2016):
<https://developer.nvidia.com/blog/image-segmentation-using-digits-5/>
- Stroke of Genius: GauGAN Turns Doodles into Stunning, Photorealistic Landscapes (Salian, 2019):
<https://blogs.nvidia.com/blog/2019/03/18/gaugan-photorealistic-landscapes-nvidia-research/>

From the notebooks:

- Crowdsourcing the creation of image segmentation algorithms for