MLDS HW3-3

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Outline

- ❖ **Timeline**

- ❖ **Model**

- ❖ **Result**

- ❖ **Submission & Rules**

- ❖ **Q&A**

Timeline

Three Parts in HW3

- (3-1) Image Generation
- (3-2) Text-to-Image Generation
- (3-3) Style Transfer

Schedule

- **4/30 or 5/4 :**
  - Release HW3-1

- **5/7 or 5/11 :**
  - Present HW 3-1
  - Release HW 3-2, HW 3-3

- **5/14 or 5/18 : Break**

- **5/21 or 5/25:**
  - Present HW 3-2, HW 3-3
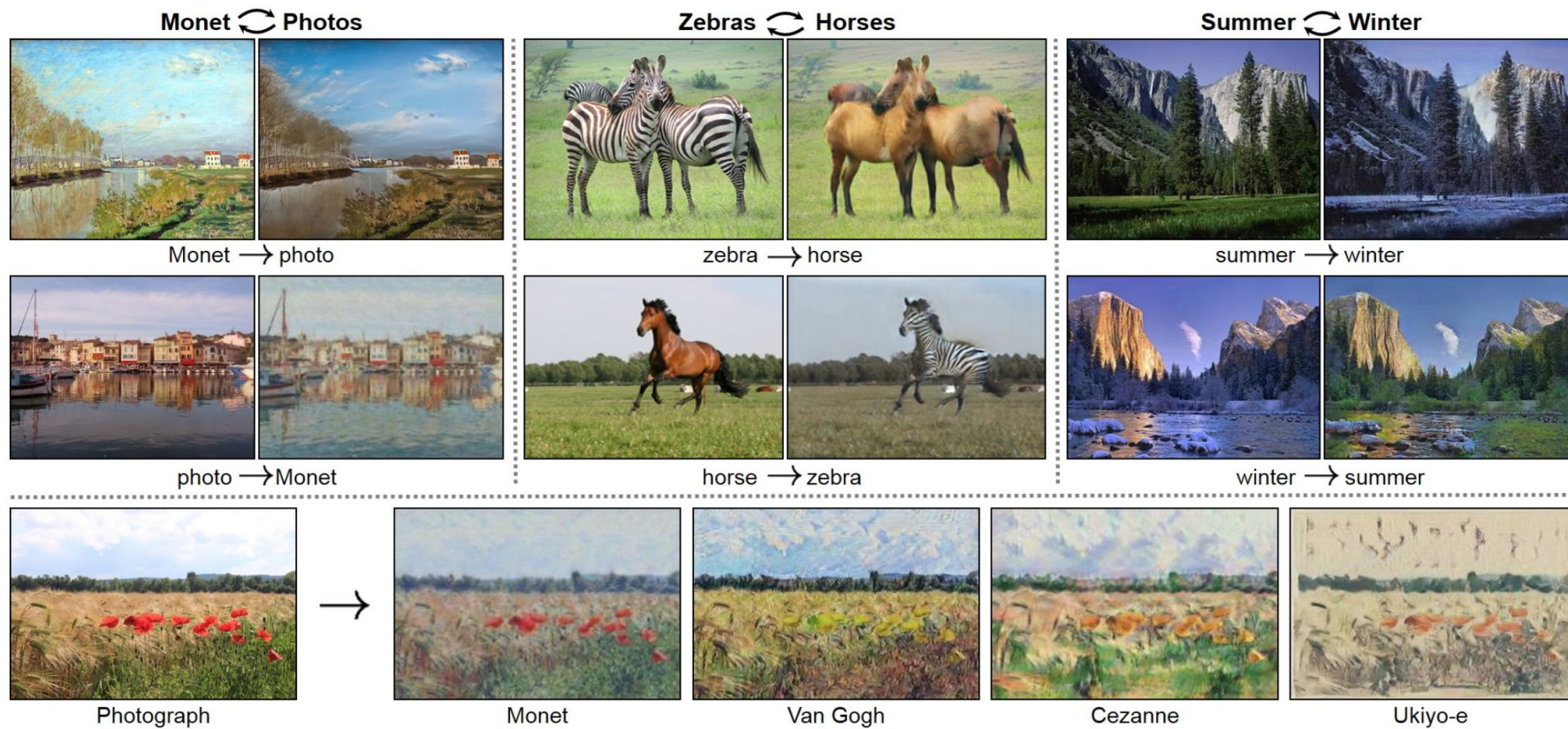
Task Descriptions
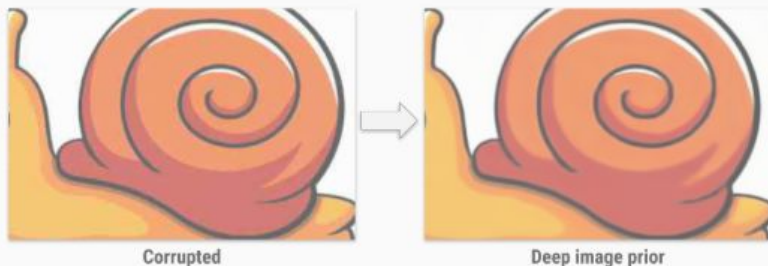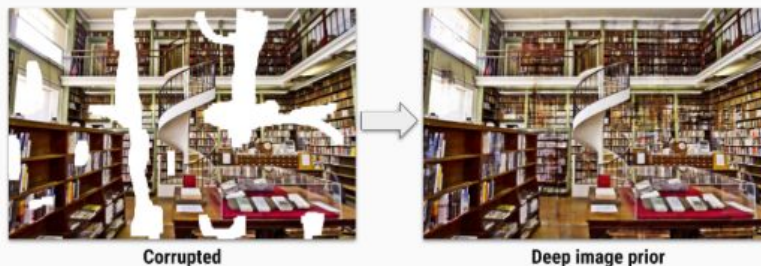
HW3-3: Style Transfer

Ref:

Image inpainting

Ref:https://arxiv.org/abs/1801.07892

Ref:https://dmitryulyanov.github.io/deep_image_prior

Other generative task
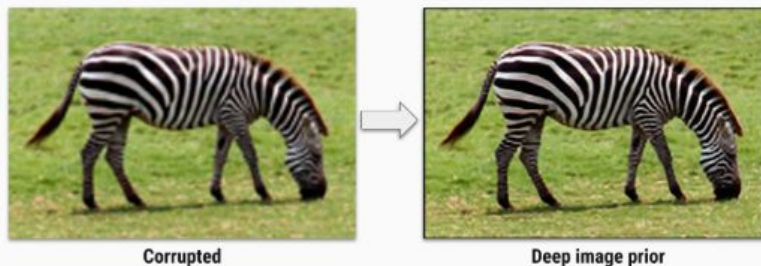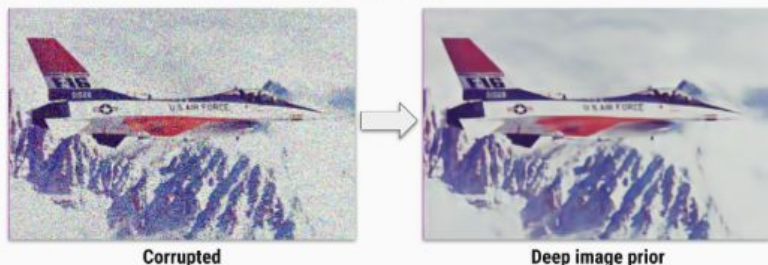
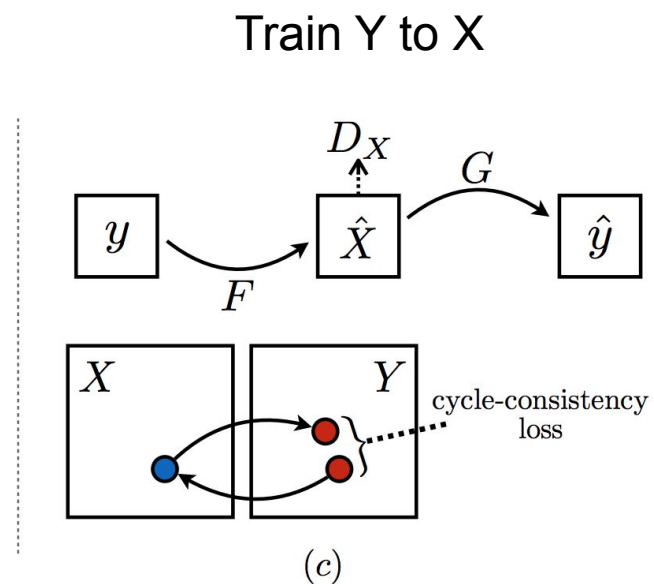Ref:https://dmitryulyanov.github.io/deep_image_prior

Model

Cycle GAN

Train X to Y

Train Y to X

(a)

(b)

(c)
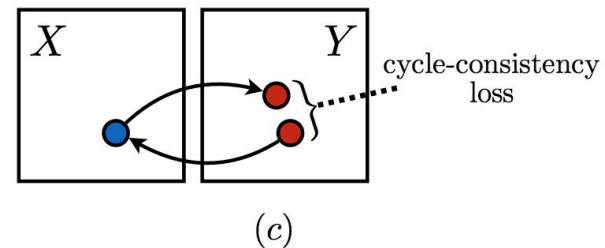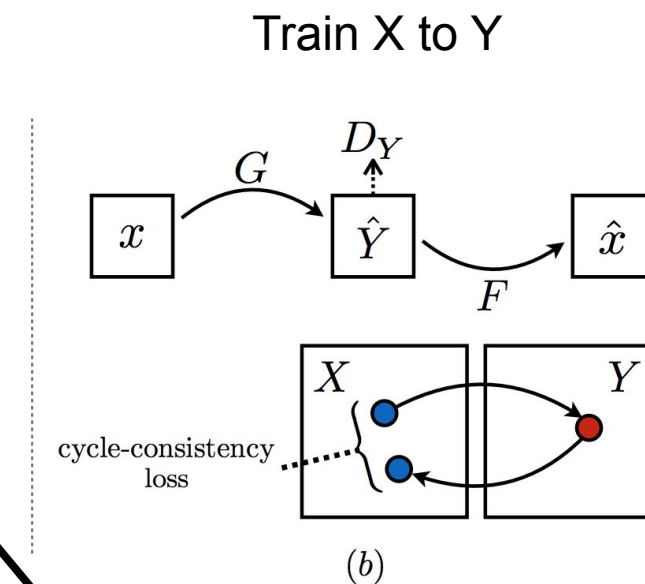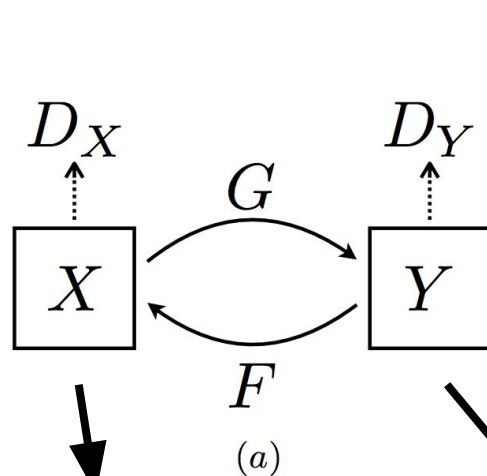
Cycle GAN Result

浮世繪教授

莫內教授

梵谷教授

動漫教授

Cycle GAN Result - zebra2horse

UNIT

$\mathcal{Z}$: shared latent space

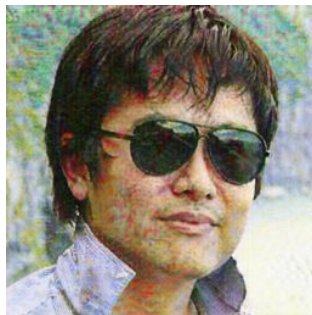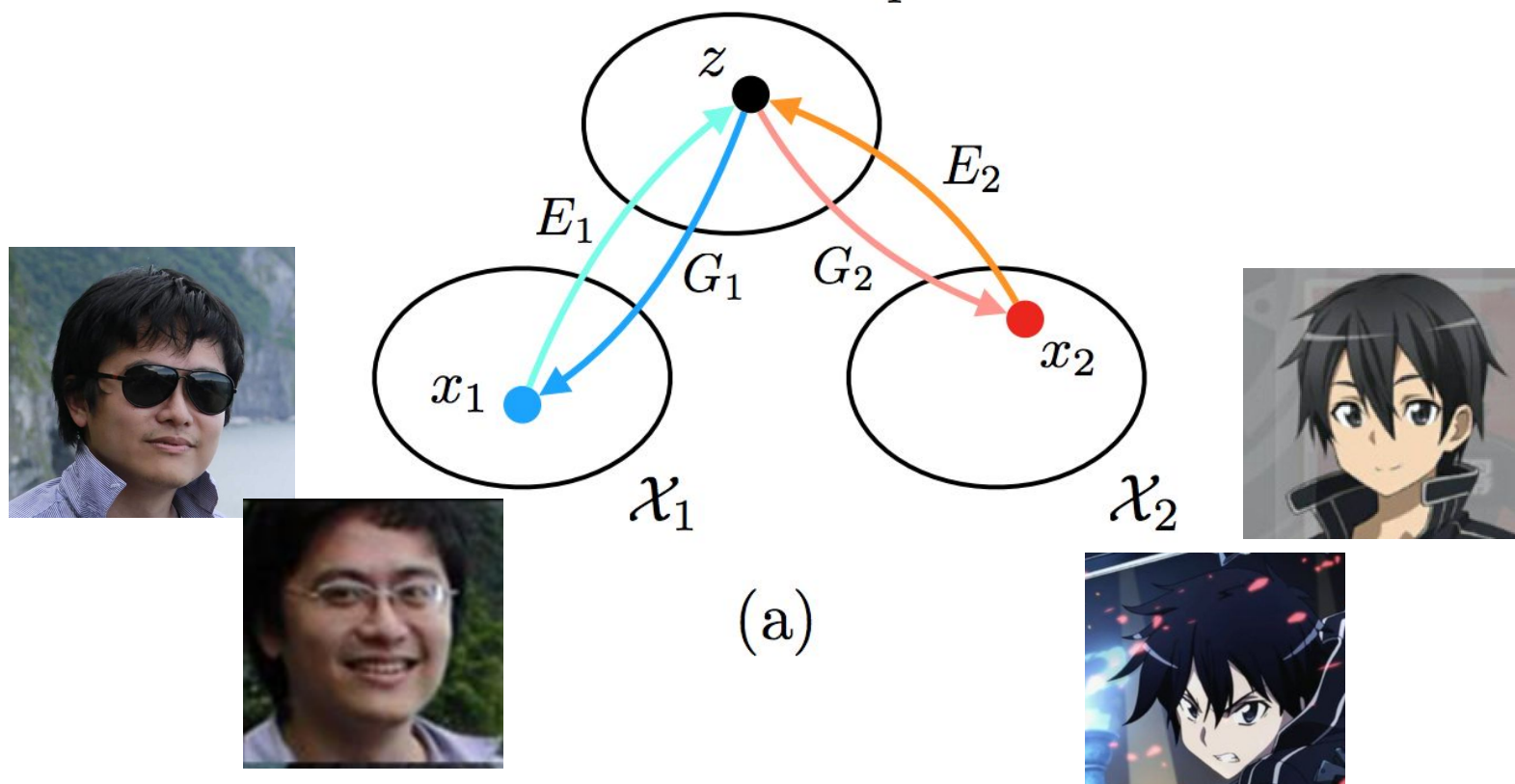(a)

UNIT Result

Anime2Real

Real2Anime

StarGAN

(b) StarGAN

圖片來源：https://www.hksilicon.com/articles/1485330

StarGAN

| Input | Blond hair | Gender | Aged | Pale skin | Input | Angry | Happy | Fearful |

Ref: https://arxiv.org/pdf/1711.09020.pdf
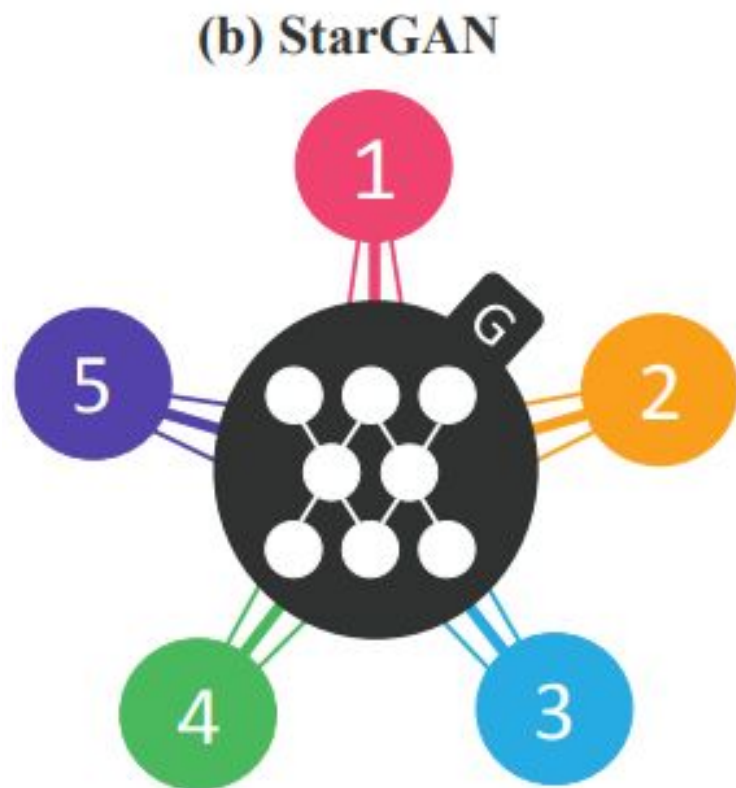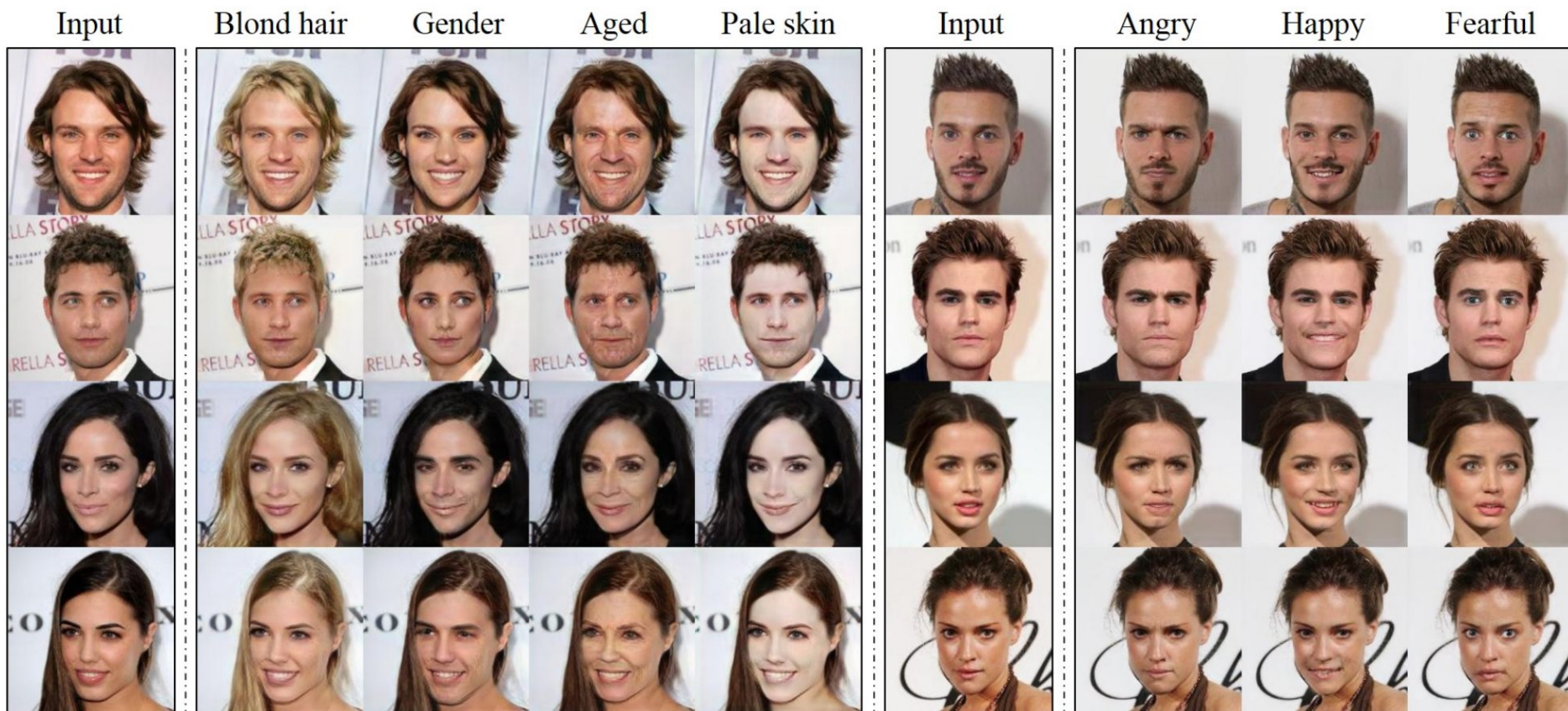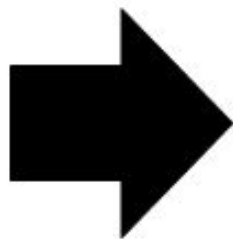
原照片　　　圖片生成:
　　　　　　吳元魁
　　　　　　Photo: Hung-Yi Lee

女性化　　變老　　金髮

InpaintGAN

Ref:https://arxiv.org/abs/1801.07892
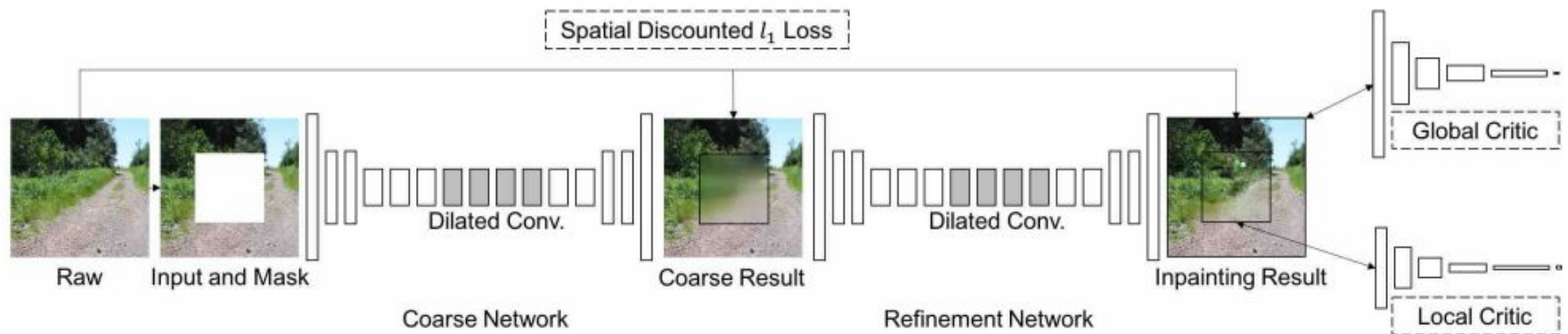
Some Reference

- Code
  - CycleGAN: [PyTorch](#) (original), [Tensorflow](#)
  - StarGAN: [PyTorch](#) (original), [Tensorflow](#)
  - UNIT: [PyTorch](#) (original), [Tensorflow](#)
  - InpaintGAN: [Tensorflow](#)
- Dataset
  - [CelebA](#)
- Other Model
  - DiscoGAN
  - DualGAN

Submission & Grading

HW3-3 Report Grading

- Show your result
  - Two domain and transfer result
- Analysis
  - Which model you use and your observation
- Any Dataset(Style) is allowed
- Any Model is allowed
- Only inference is allowed

Q&A

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