# MLDS HW3-3

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#### **Outline**

- Timeline
- Model
- Result
- Submission & Rules
- **Q&A**

# Timeline

#### **Three Parts in HW3**

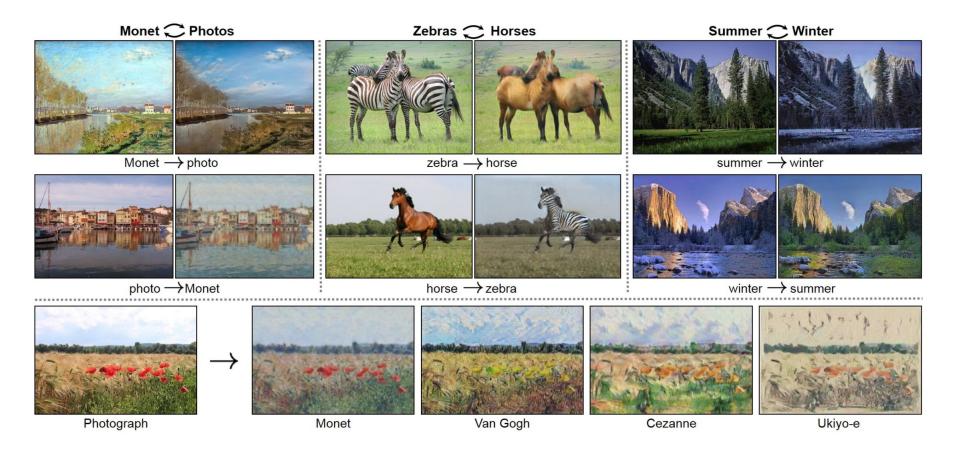
- (3-1) Image Generation
- (3-2) Text-to-Image Generation
- (3-3) Style Transfer (Bonus)

#### **Schedule**

- 5/4:
  - o Release HW3-1
- 5/11:
  - Release HW3-2
- 5/18:
  - Release HW3-3
- 6/8:
  - All HW3 due (including HW3-1, HW3-2, HW3-3)
- 上台分享

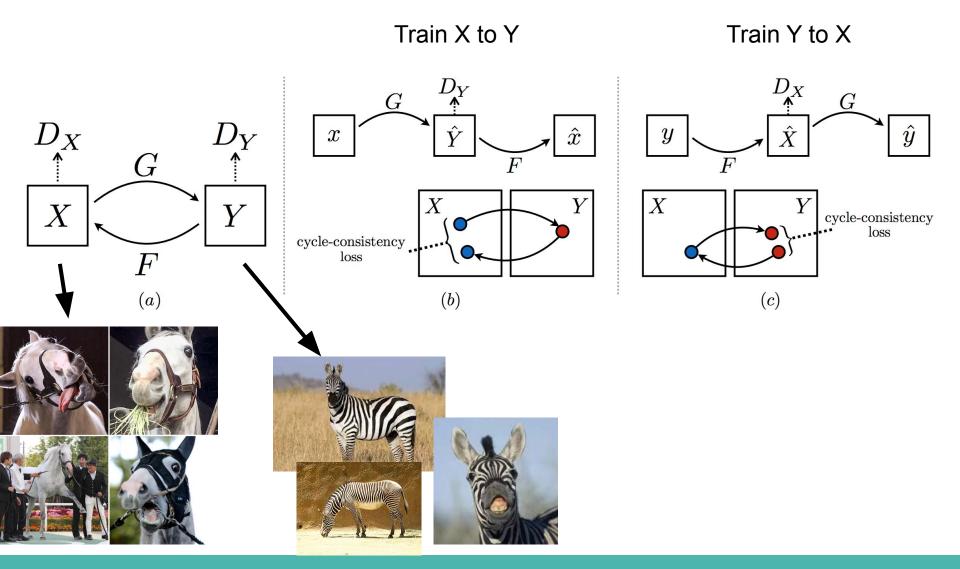
# **Task Descriptions**

# **HW3-3: Style Transfer**



# Model

## **Cycle GAN**



# **Cycle GAN Result**











浮世繪教授

莫內教授

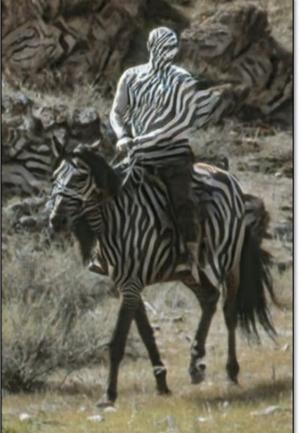
梵谷教授

動漫教授

# Cycle GAN Result - zebra2horse

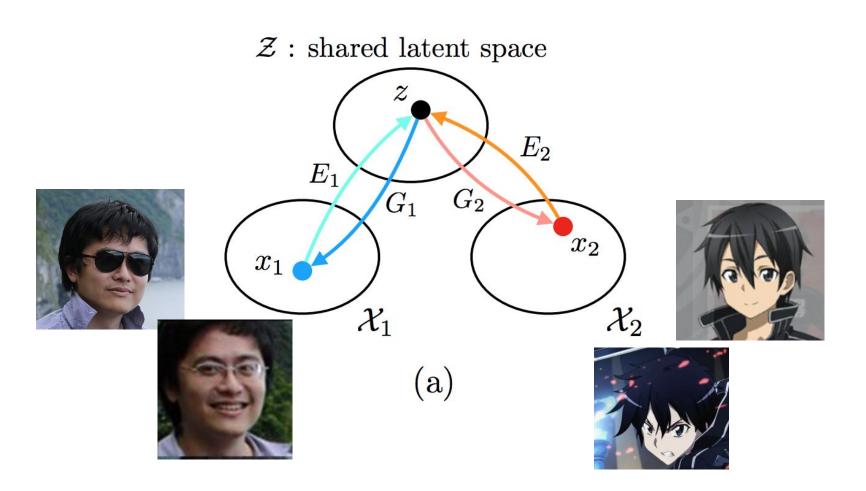








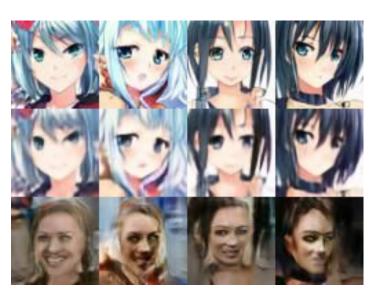
#### **UNIT**



#### **UNIT Result**

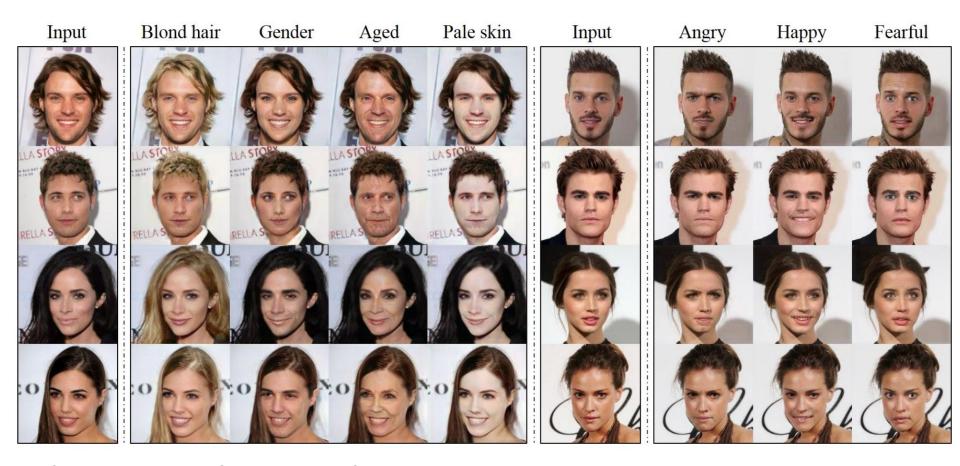
Anime2Real

Real2Anime





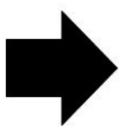
#### **StarGAN**



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

#### **Some Reference**

- Code
  - CycleGAN: <u>PyTorch</u> (original), <u>Tensorflow</u>
  - StarGAN: <u>PyTorch</u> (original), <u>Tensorflow</u>
  - UNIT: <u>PyTorch</u> (original), <u>Tensorflow</u>
- Dataset
  - o CelebA
- Other Model
  - DiscoGAN
  - DualGAN

# Submission & Grading

### **HW3 Grading Policy:**

- HW3-1 Code (image generation): 5%
- HW3-2 Code (text-to-image generation): 5%
- Report: 15% (+2%)
  - HW3-3 (Bonus, style transfer): 2%
- 分工表:0.5%
- 上台分享:1%
- 上台分享前三名:1%

### **HW3 Report Questions**

- Model Description
- Experiment settings and observation
  - Experiment: changing parameter..., data augmentation
  - You can use wgan, wgan-gp, Isgan in this section
  - Comparison between gan and wgan, wgan-gp, Isgan should move to the next section
- Compare your model with WGAN, WGAN-GP, LSGAN (choose 1) (Image Generation Only)
- Training tips for improvement (Image generation Only)
- Style Transfer (2%)

### **HW3-3 Report Grading**

- Show your result (1%)
  - Two domain and transfer result
- Analysis (1%)
  - Which model you use and your observation
- Any Dataset(Style) is allowed
- Any Model is allowed
- Only inference is allowed

#### **Submission**

- Deadline: 2018/06/08 GMT+8 24:00
- hw3/ should contain the following files:
  - run\_gan.sh (hw3-1)
  - run\_cgan.sh (hw3-2)
  - extra\_run.sh (hw3-3, bonus) (Move into report)
  - samples/, samples/gan\_original.png, samples/cgan\_original.png
  - report.pdf
  - pre-trained model, python code...
  - If some files are too big, upload to your cloud and download them when running your run.sh
  - 紅字表示必要, 且名稱不得更改 其餘不限制
- TAs will run your scripts in the following order to generate images
  - bash run\_gan.sh (hw3-1)
  - bash run\_cgan.sh <testing\_tags.txt> (hw3-2)
  - All scripts must output in 10 minutes.
  - shell script裡面請寫相對路徑
- 遅交沒有分開計算

# **Q&A**

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