



Only You

Automatic Face Replacement
Web Service for portrait rights protection
using FaceNet and cycleGAN

Team B

“ Contents ”

1. Team Introduction

2. Project Overview

3. Development & web UI

4. Issues

5. Q&A

“ Contents ”

1. Team Introduction

“ Who work for this Project ? ”



Jung Yunho

Team Leader
Data modeling
Data Processing



Lee Hyunjae

Web Development
Data modeling



Lee Seungjin

Data Collection
Web development




Roh Younwoo

Data preprocessing

“ How do we collaborate ?”

<https://github.com/onlyyou-teamb>

 OnlyYou-teamB

Repositories 3

Packages

People 5

Teams

Projects 1

Settings

Type: All

Language: All

Customize pins

New

Handling-pictures

face detection, face recognition, GAN

Python 0 Forks 0 Stars 0 Issues 0 Updated yesterday

Server

django

Tcl 0 MIT 1 Forks 1 Stars 12 Issues 0 Updated 2 days ago

Documentations

0 Forks 0 Stars 0 Issues 0 Updated 9 days ago


Top languages

Python

Tcl

People

5 >



Invite someone

“ How do we collaborate ?”

Repositories 3

Packages

People 5

Teams

Projects 1

Settings

development

Updated 4 days ago

Filter cards

3 To do

Share Dockerfile and deploy it as a service on GCP

Added by hyunjae-lee

Check out how to use different database or frameworks

Added by hyunjae-lee

Dockerizing this web application

Added by hyunjae-lee

8 In progress

Add upload page and its feature

Server#10 opened by hyunjae-lee

Gallery should not display other user's posts to the user who required to the server.

Server#11 opened by hyunjae-lee

Make the website design moderately user-friendly

Server#12 opened by hyunjae-lee

Build a function for converting detected faces in pictures to replace them with generated faces.

Server#9 opened by hyunjae-lee

Build a function for face detection and

6 Done

Design DB Schema to create models in Django

Server#5 opened by hyunjae-lee

Summarize this project into one paper until 8/13 (Wen)

Added by hyunjae-lee

Prepare for the presentation on 8/17 (Sat)

Added by hyunjae-lee

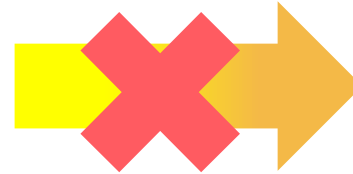
Create a basic structure for the webpage

Server#1 opened by hyunjae-lee

“ Contents ”

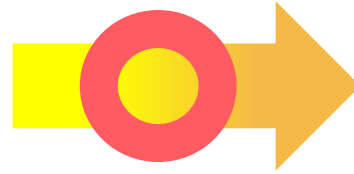
2. Project Overview

“ Why we start this project ? ”

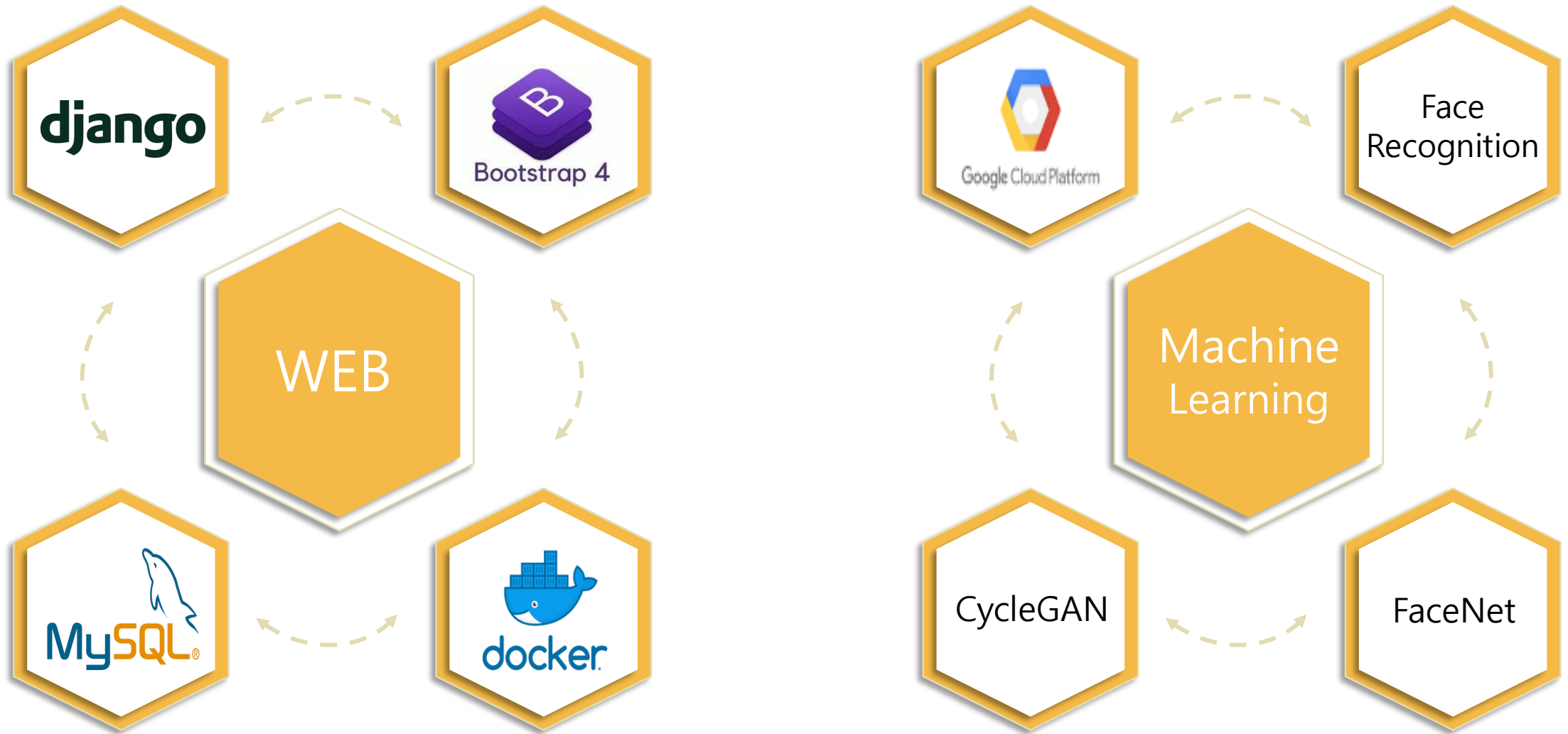


“ Why we start this project ? ”

If their faces turn into Simpson's faces..



“ What we use in this project ? ”



“ What is Our project plan ? ”

1st
Week



2nd
Week



3rd
Week

“Brainstorming”



Web

Modeling & Design

- Make user, post model
- Design web-page using Bootstrap
- Integrity verification

Web

Code Execution

- Check Face Recognition code execute correctly
- Exception Handling
- Preparation for Demo

ML

Modeling

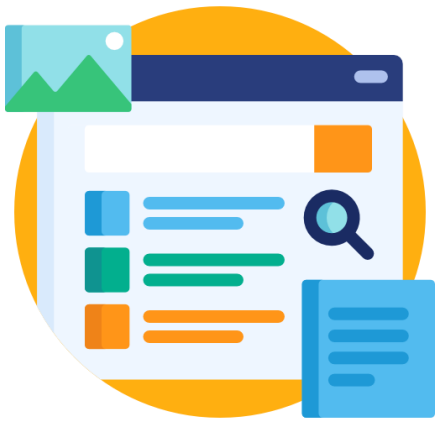
- Write CycleGAN,
- Face Recognition code

ML

Learning

- Start learning with GCP
- Preparation for Demo

“ This is What We Want ”



“If you use our website..”

**Don't be hesitated
When upload your image**



**Protecting Everyone's
Portrait Rights**

Photography Release Agreement

I consent to the use of my name, portrait, picture or photograph as part of Langley manufacturing's new employee introduction and to be used as my photo for the companies email, team huddles and or intranet. This photo is intended for internal use only and will not be used for any promotional material.

I understand that if any image is selected for any additional uses, I will be consulted beforehand.

I agree that I shall have no claim against anyone for accessing or using images from this collection.

I confirm that I am over 19 years old and that I have no one the exclusive right to use my name, portrait, picture or photograph.

Signed,

Name (print in block letters): _____

Date: _____

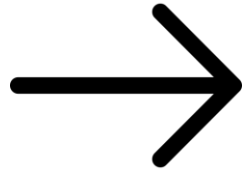
“ Contents ”

3-1. Development

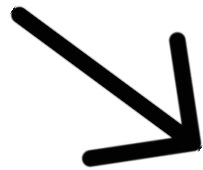
“ Service flow ”



User



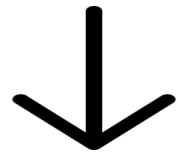
Register his photo



Upload a picture



Look for the user in the picture



Create another picture that the other's faces in the picture would be replaced with Simson's faces

“ How we did this ”



“ Face Recognition ”



Adam Geitgey

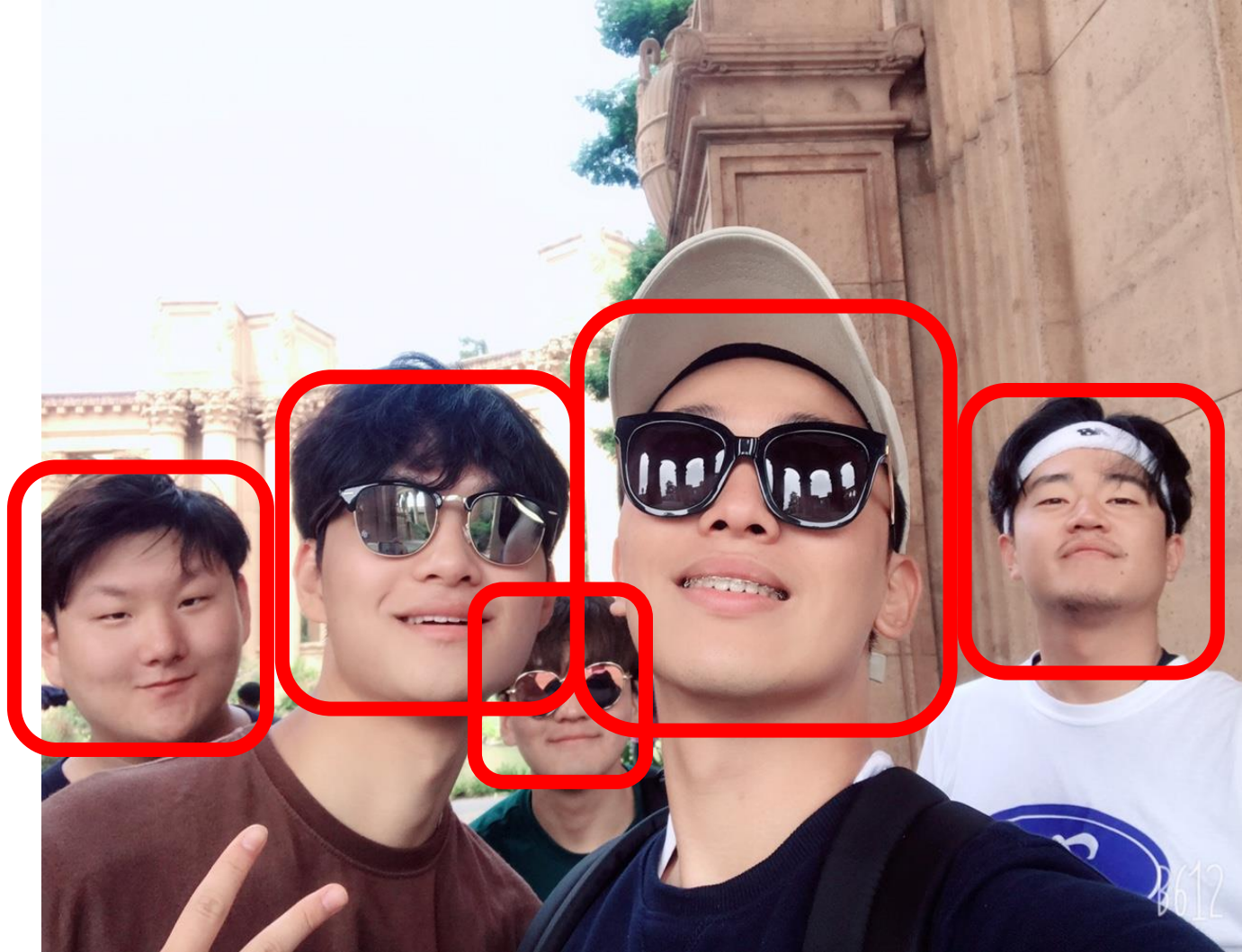
ageitgey

Follow

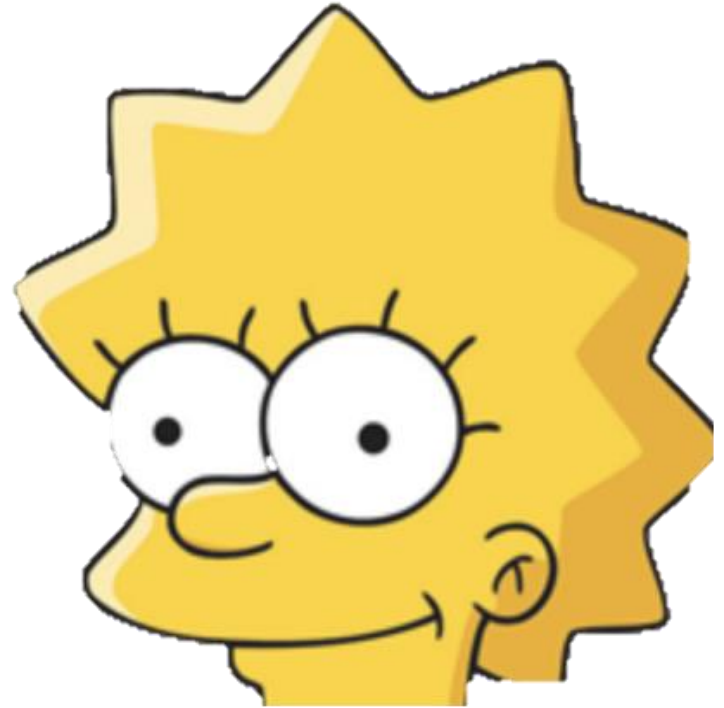
What Is HOG-Method?



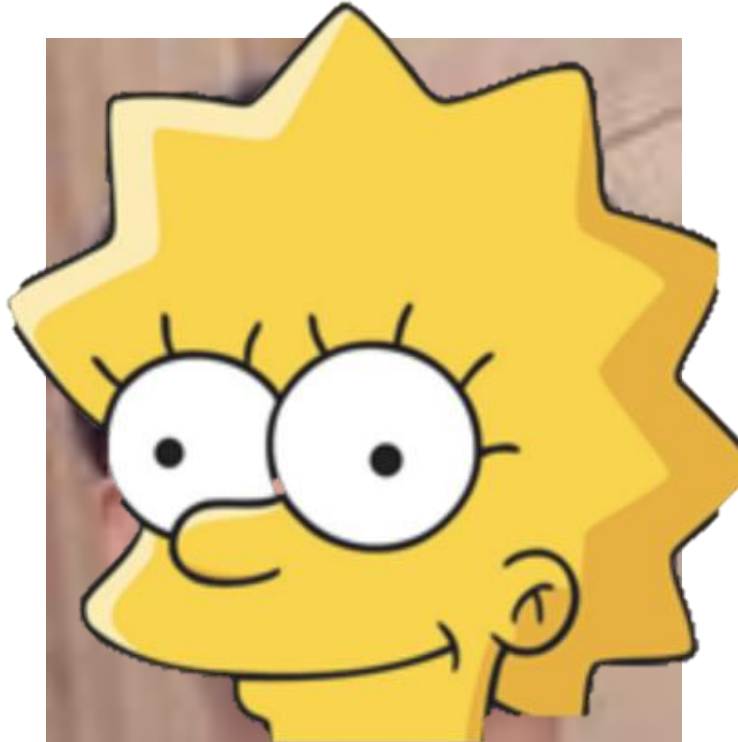
“ How we did this ”



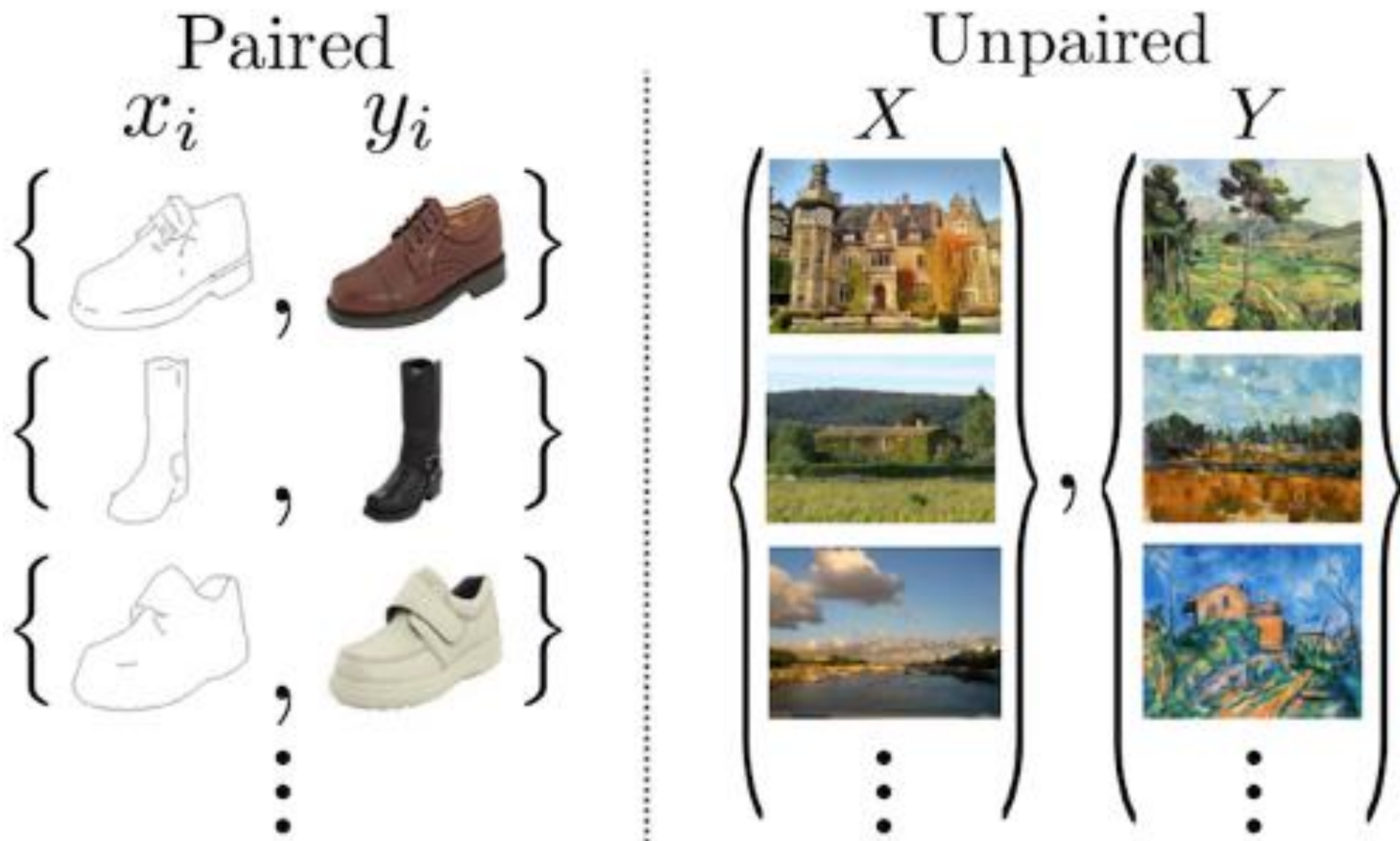
“ How we did this ”



“ How we did this ”



“ What is CycleGAN ”



“ What is CycleGAN ”

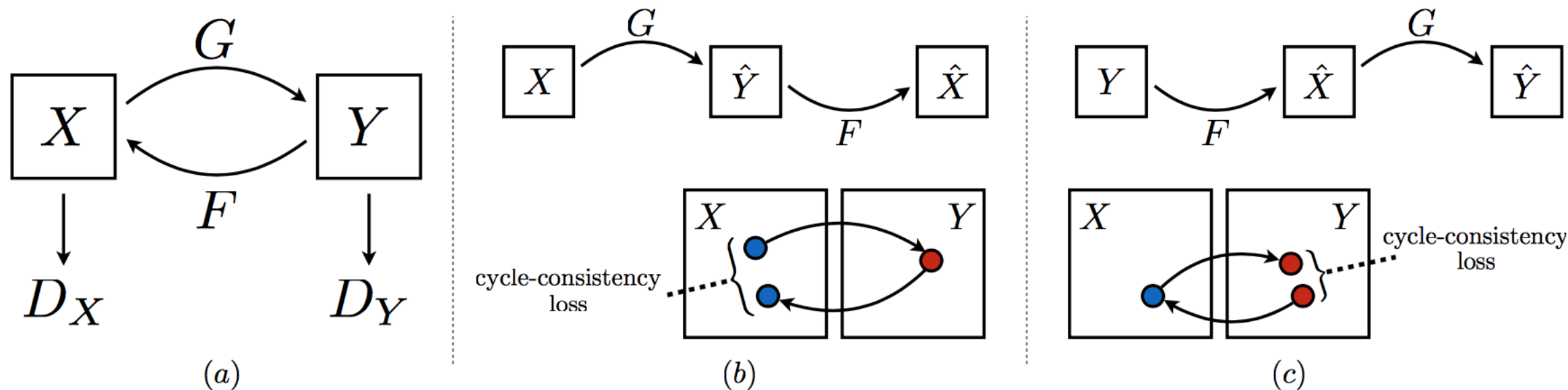


Figure 3: (a) Our model contains two mapping functions $G : X \rightarrow Y$ and $F : Y \rightarrow X$, and associated adversarial discriminators D_Y and D_X . D_Y encourages G to translate X into outputs indistinguishable from domain Y , and vice versa for D_X , F , and X . To further regularize the mappings, we introduce two “cycle consistency losses” that capture the intuition that if we translate from one domain to the other and back again we should arrive where we started: (b) forward cycle-consistency loss: $x \rightarrow G(x) \rightarrow F(G(x)) \approx x$, and (c) backward cycle-consistency loss: $y \rightarrow F(y) \rightarrow G(F(y)) \approx y$

“ Dataset ”

Human Face



<https://github.com/NVlabs/ffhq-dataset>

Simpson Face



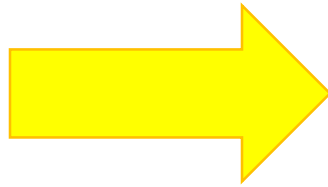
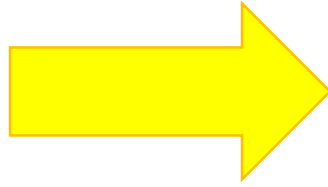
<https://www.kaggle.com/kostastokis/simpsons-faces>

“ How can we develop “

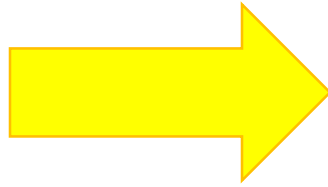
Face Net : search face with KNN Method



“CycleGAN images from train data set ”



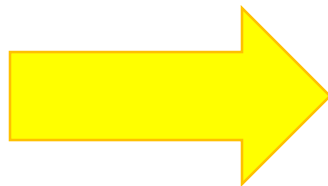
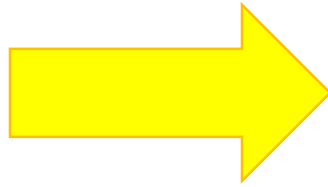
“ CycleGAN images from train data set ”



“ Results ”



“ Results ”



“ Results ”



“ Contents ”

3-2. Web UI

“ Web UI ”

[Home](#)[About Us](#)[Logout](#)[Profile](#)[Gallery](#)

Save Your Portrait Rights

“ Save your own rights. We think you might have an experience that someone who should not appear in your photo. Then you must use this website. Press the button and upload your own image. ”

UPLOAD YOUR IMAGE



“ Web UI ”

Our Team Member

프로젝트 멤버 소개

배경은 우리 4명이서 찍은 사진



Jung Yunho

Team Leader
Data modeling
Data Processing



Lee Hyunjae

Web Development
Data modeling



Lee Seungjin

Data Collection
Web development



Roh Younwoo

Data preprocessing

Log In

[🏠 Home](#) » [Login](#)

Username*

demotest

Password*

.....

LOGIN

[Forgot Password?](#)

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Gallery

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LOAD MORE



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Thomas Rd, Santa Clara, CA 95054

Post Edit

[🏠 Home](#) » [Post Edit](#)

Title*

Content*

Before image*

선택된 파일 없음

After image

선택된 파일 없음

POST

“ Contents ”

4. Issues

“ These are Our Issues ! ”

- 1. We are Django newbies!**
- 2. How can we deploy our app with Docker ?**
- 3. Lack of resources and time for training data**
- 4. Real-time operation problems**

“ Limits.... ”

- 1. It took so long for training the model(over 5days)**
- 2. So, we had problems in tuning HyperParameter after training**
- 3. We wanted to make the surrounding of faces look more natural**
- 4. The face data of training sets mostly included western faces**
- 5. So, it couldn't recognize eastern faces' features**

Q & A

“ Reference ”

<https://github.com/davidsandberg/facenet>

<https://github.com/xhujoy/CycleGAN-tensorflow>

<https://www.kaggle.com/kostastokis/simpsons-faces>

<https://github.com/NVlabs/ffhq-dataset>

https://www.cvfoundation.org/openaccess/content_cvpr_2015/papers/Schroff_FaceNet_A_Unified_2015_CVPR_paper.pdf

https://www.youtube.com/watch?v=9N_uOIPghuo