

My Font

중간 평가 발표

황용환
김선규
오근택
이상욱



Fact Check

라벨링 데이터 부족

가짜뉴스 단어의 재정의

가정에 기반한 색다른 접근

가정을 뒷받침할 근거 부족



My Font



프로젝트 개요



역할 분담



수행 내용



향후 계획



1

프로젝트 개요

프로젝트 개요

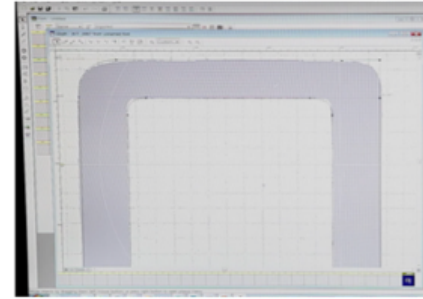
기존 폰트 생성 방식



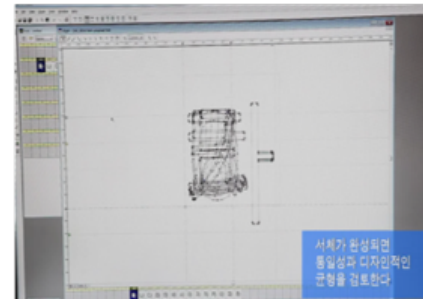
①



②



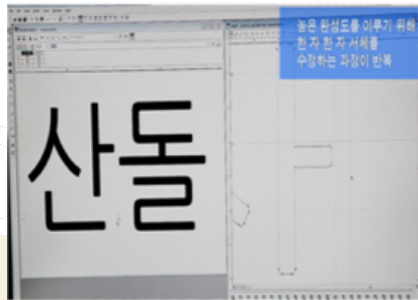
③



④

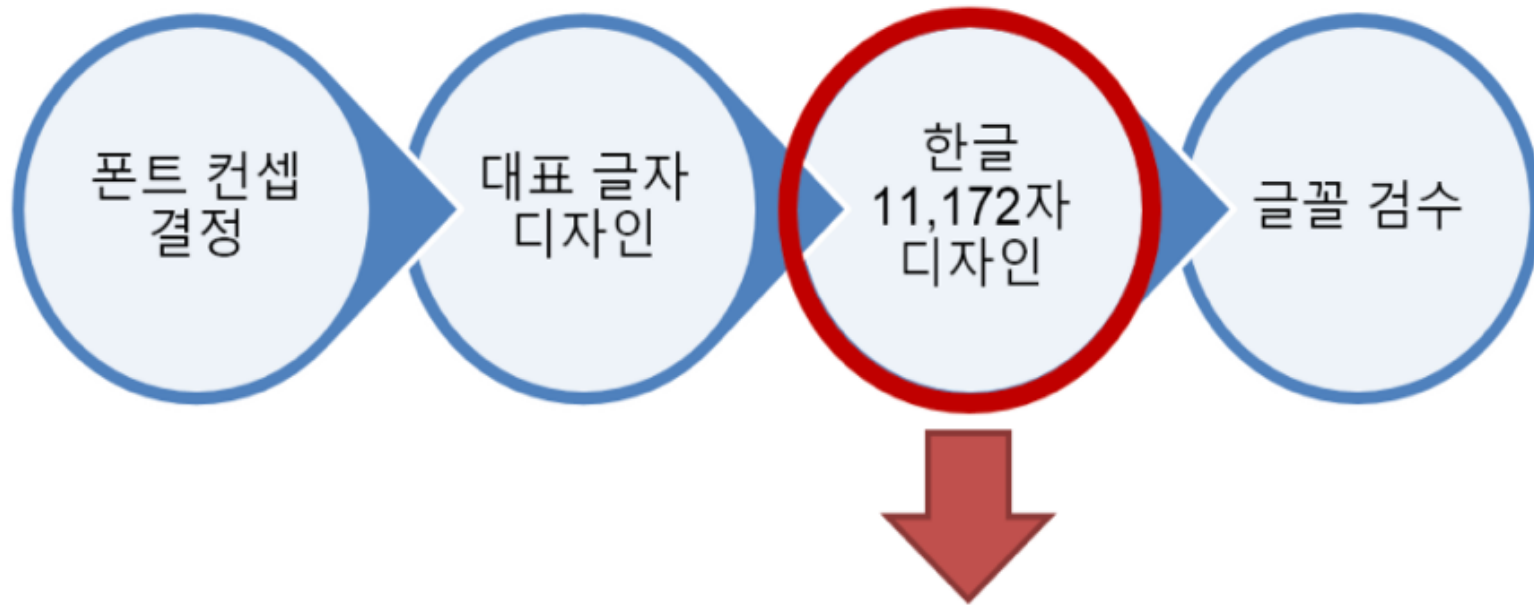


⑤



⑥

한글 폰트 제작 과정



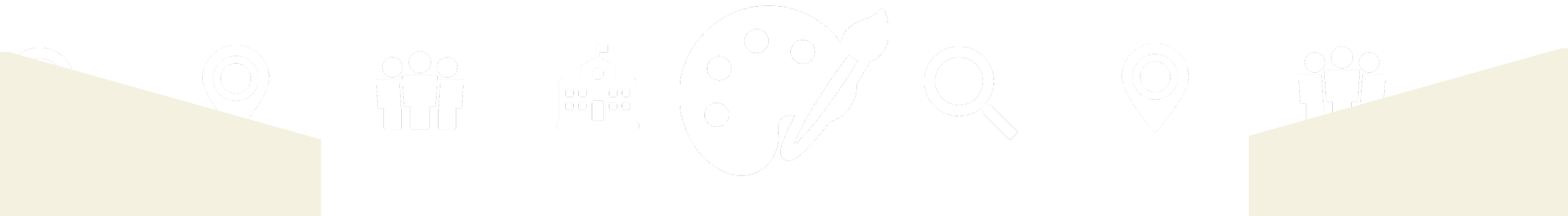
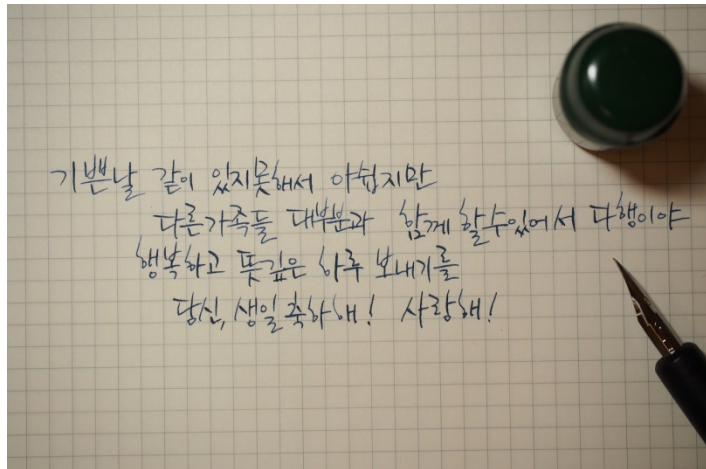
막대한 시간 필요

(글자 하나 디자인 하는데 10분만 걸린다고 해도 1,862 시간 필요)
개인 디자이너는 한글 폰트 제작이 거의 불가능!

프로젝트 개요



Machine Learning





2

역할 분담

2

역할 분담

황용환 : 전반적인 프로세스 관리

김선규 : 웹 인터페이스 개발

오근택 : 영상처리

이상욱 : 데이터 수집 및 처리

공통 : 폰트 생성 모델 구현



3

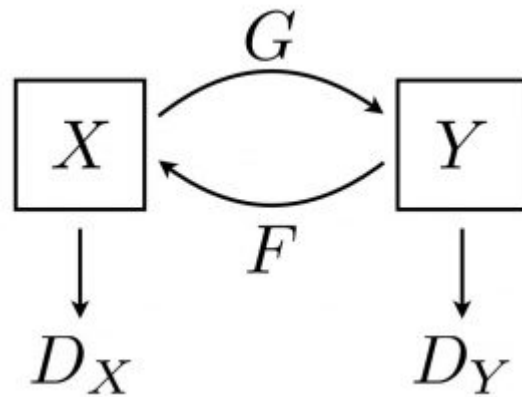
수행 내용

3

사용 기술

OCR

Optical Character Recognition



Cycle
Generative Adversarial Networks



Image to TTF

OCR

테스트 다운로드 바탕화면
최근위치 라이브러리 음악
로컬디스크



```
[192:ocr iamyonghwan$ python test1.py font.png  
<PIL.PngImagePlugin.PngImageFile image mode=P size=380x132 at 0x105F35990>  
테스트 다운로드 바탕화면  
최근위치 라이브러리 음악  
로컬디스크
```

CycleGAN

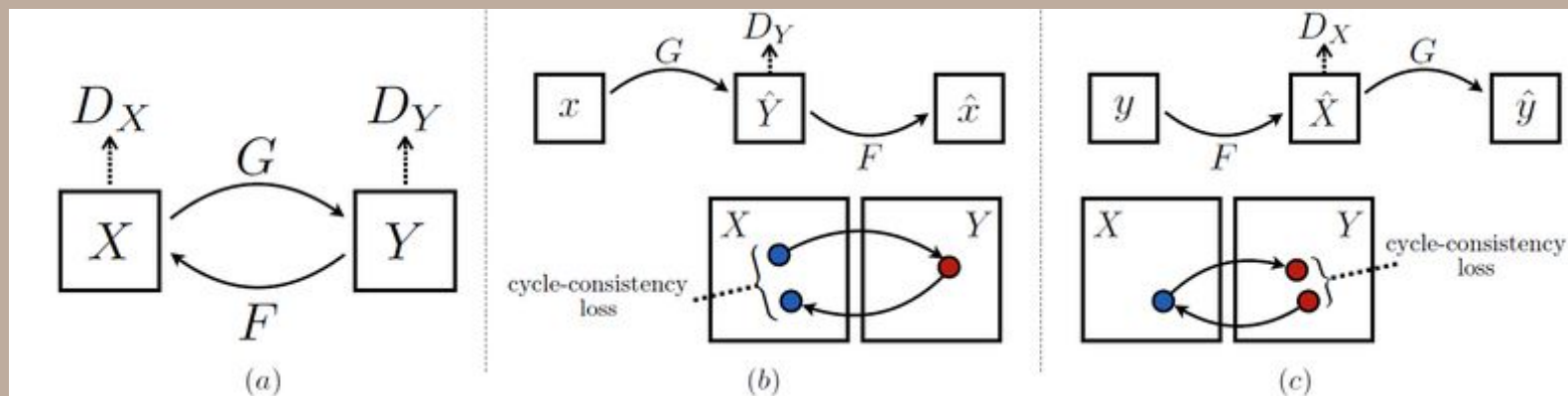


Figure 3: (a) Our model contains two mapping functions $G : X \rightarrow Y$ and $F : Y \rightarrow X$, and associated adversarial discriminators D_Y and D_X . D_Y encourages G to translate X into outputs indistinguishable from domain Y , and vice versa for D_X , F , and X . To further regularize the 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: $y \rightarrow F(y) \rightarrow G(F(y)) \approx y$

CycleGAN



CycleGAN

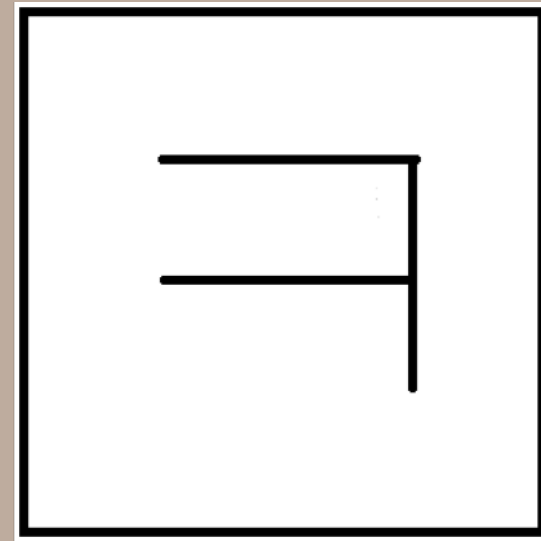
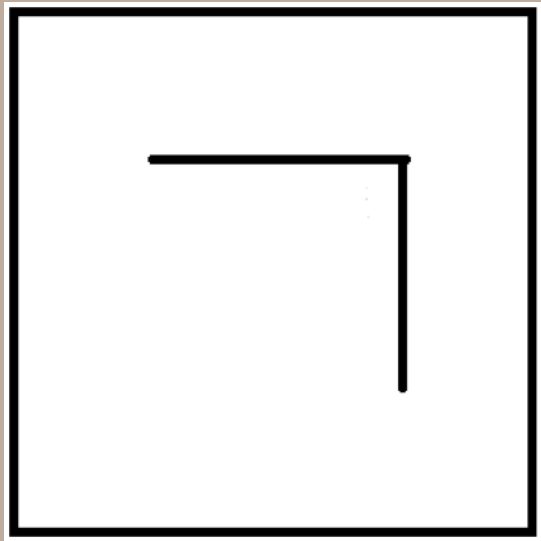


Image to TTF

ㄱ → 가 → 갑 → 갇

ㄱ → 가 → 갑 → 갇



4

향후 계획

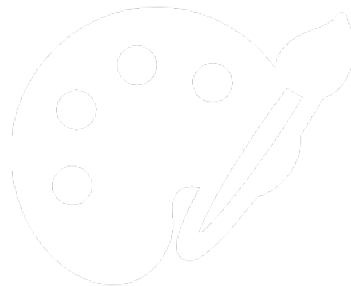
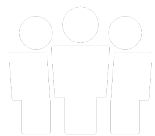
Cycle GAN 정확도 향상

많은 데이터 수집이 필요함

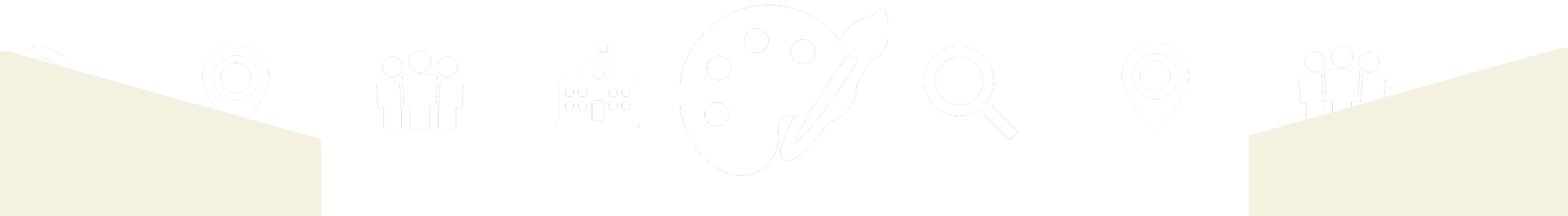
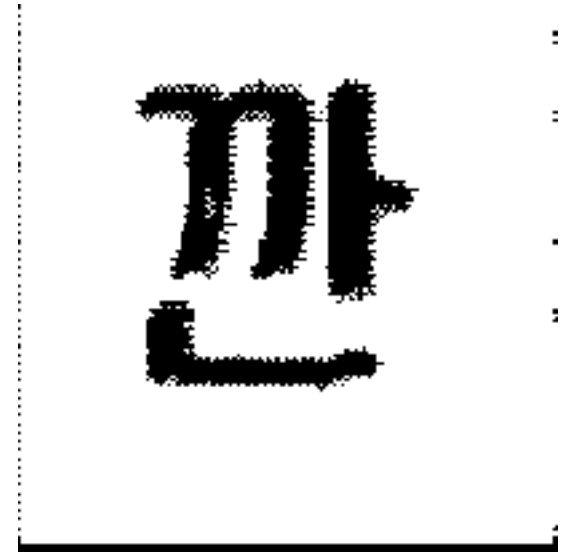
데이터로 사용할 무료 폰트는 한계가 있음

유전자 알고리즘을 사용하여 폰트 이미지를 변형하여 데이터 개수 증가

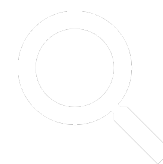
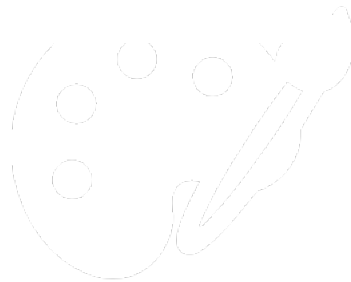
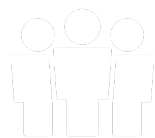
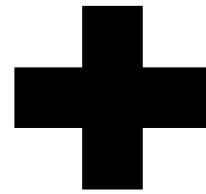
이미지를 다중스케일을 적용하여 데이터 개수 증가



생성된 이미지 후처리

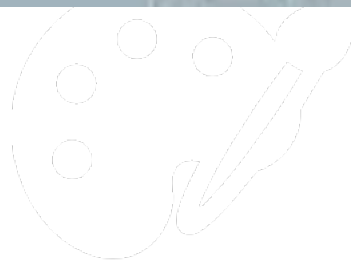
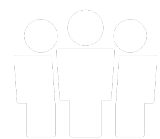


Web Interface 디자인 및 구현



향후 계획

실험





Q&A

The image features a dark gray background. In the center-left, there is a large circle with a thick white border and a dark gray inner ring. Inside this ring, the text "Q&A" is written in a dark gray, serif font. To the right of this large circle, there are two smaller, solid light beige circles of different sizes, arranged in a descending diagonal line from bottom-left to top-right.