

디지털 영상처리

텀 프로젝트 2: Image To Text (문자 인식)

목표

■ 글자 인식

- 테서렉트를 이용하여 영상에서 글자를 추출하는 프로그램 구현



Hus

Dohyun Engineering & Construction Co.,Ltd

(주)도현종합건설 |

a ST

건축사업부 Tel. 064.759.0449
i Fax, 064.712.0449
ay 이호진 E-mail: Ihj5670@huangroup.co.kr

홈페이지: www. huangroup.co.kr
HP. 010.2739.5670 제주특별자치도 제주시 간월동로 72-7



```
(OpenCV) D:\Projects\Lecture_source>python imageio1ext.py  
ImageToText.py:43: DeprecationWarning: an integer is required (got type numpy.float32).  
    result = cv2.warpPerspective(img, mtrx, (width, height))  
| >
```

(주)도현종합건설

배경색이 있는 경우

테서렉스(Tesseract)

■ 테서렉트는 Google의 다양한 운영 체제를 위한 광학 문자 인식 엔진

- 100개가 넘는 다양한 언어들을 인식할 수 있음
- 오픈소스이기 때문에 누구나 무료로 사용가능
- C/C++ 언어로 구성되어 있지만 PyTesseract 패키지를 이용하여 파이썬 환경에서도 사용할 수 있음



Tesseract OCR

테서렉스(Tesseract) 설치

- 설치 링크 : <https://github.com/UB-Mannheim/tesseract/wiki>

Tesseract installer for Windows

Normally we run Tesseract on Debian GNU Linux, but there was also the need for a Windows version. That's why we have built a Tesseract installer for Windows.

WARNING: Tesseract should be either installed in the directory which is suggested during the installation or in a new directory. The uninstaller removes the whole installation directory. If you installed Tesseract in an existing directory, that directory will be removed with all its subdirectories and files.

The latest installers can be downloaded here:

- [tesseract-ocr-w32-setup-v5.2.0.20220712.exe](#) (32 bit) and
- [tesseract-ocr-w64-setup-v5.2.0.20220712.exe](#) (64 bit) resp.

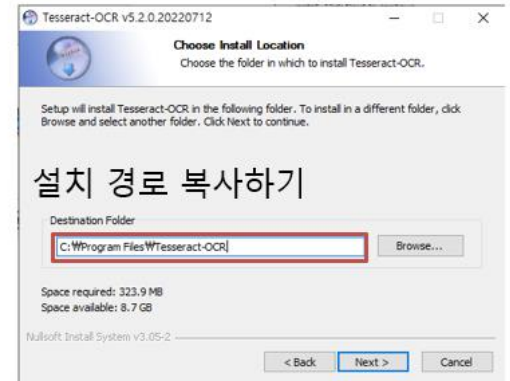
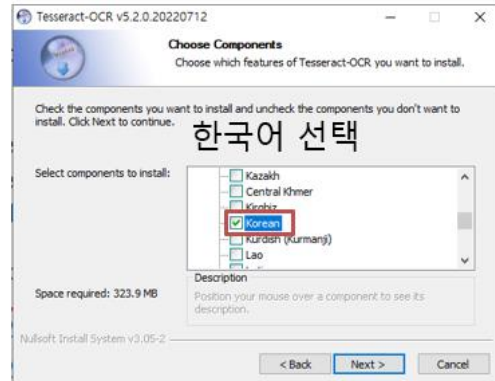
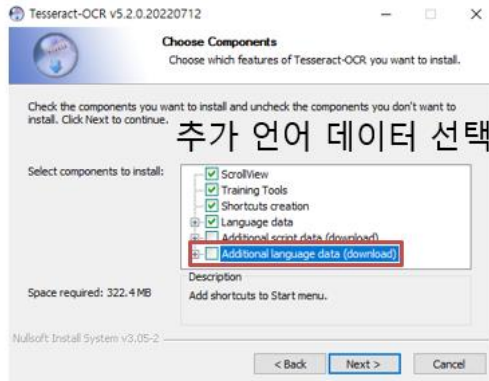
알맞은 윈도우 버전으로 설치

There are also [older versions](#) available.

In addition, we also provide [documentation](#) which was generated by Doxygen.

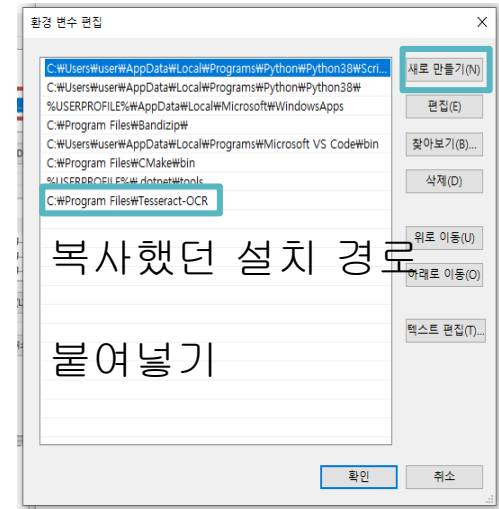
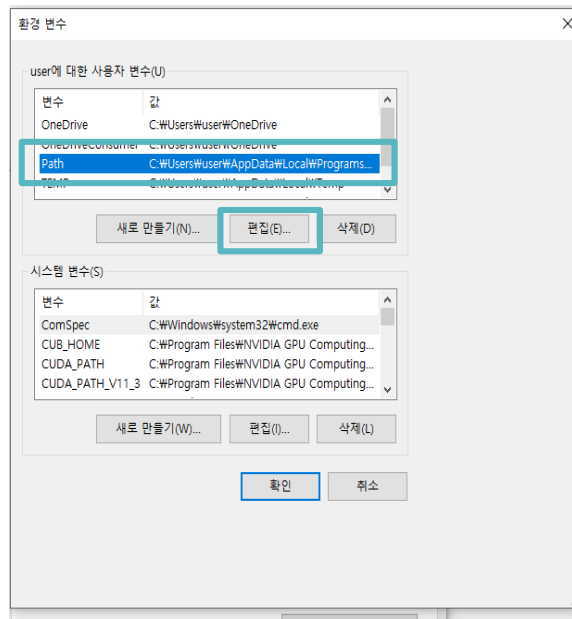
테서렉스(Tesseract) 설치

■ 설치 링크 : <https://github.com/UB-Mannheim/tesseract/wiki>



테서렉스(Tesseract) 설치

■ 설치 링크 : <https://github.com/UB-Mannheim/tesseract/wiki>



코드 실습

```
import cv2
import numpy as np
import pytesseract
```

```
TESSERACT_PATH = "C:/Program Files/Tesseract-OCR/tesseract.exe"
```

테서렉트 설치경로/tesseract.exe

```
imgpath='./imgs/2.jpg'
win_name = 'Image To Text'
img = cv2.imread(imgpath)
```

```
def GetOCR():
    #이미지 처리
    global img

    #OCR모델 불러오기
    pytesseract.pytesseract.tesseract_cmd = TESSERACT_PATH

    #OCR모델로 글자 추출
    text = pytesseract.image_to_string(img, lang='kor+eng')

    return text
```

```
cv2.imshow(win_name, img)
cv2.waitKey(0)
text = GetOCR()
print(text)
```

```
PS D:\Projects\Lecture_source> pip install pytesseract
```

```
Collecting pytesseract
  Using cached pytesseract-0.3.10-py3-none-any.whl (14 kB)
Collecting packaging>=21.3
  Downloading packaging-22.0-py3-none-any.whl (42 kB)
    42.6/42.6 kB 2.2 MB/s eta 0:00:00
Collecting Pillow>=8.0.0
  Downloading Pillow-9.3.0-cp38-cp38-win_amd64.whl (2.5 MB)
    2.5/2.5 MB 22.5 MB/s eta 0:00:00
Installing collected packages: Pillow, packaging, pytesseract
```

파이썬 pip 명령어로 pytesseract 패키지 설치

```
PS D:\Projects\Lecture_source> pip install numpy
```

```
Collecting numpy
  Downloading numpy-1.23.5-cp38-cp38-win_amd64.whl (14.7 MB)
    14.7/14.7 MB 34.4 MB/s eta 0:00:00
Installing collected packages: numpy
```

파이썬 pip 명령어로 numpy 패키지 설치

코드 실행

■ 임의의 명함 영상을 이용해 인식해 봄



CMD 실행결과

```
(OpenCV) D:\Projects\Lecture_source>python ImageToText_copy.py
```

```
(OpenCV) D:\Projects\Lecture_source>[]
```

실행결과

글자를 제대로 인식하지 못하여

아무것도 출력되지 않거나

맞지 않는 글자들이 출력

구현 결과 소개