딥러닝 기본 환경 만들기

학습 내용
내 컴퓨터의 파이썬 버전을 확인한다.
내 컴퓨터에 가상환경을 만든다.
내 컴퓨터에 tensorflow와 keras를 설치한다.

01 내 컴퓨터의 파이썬 버전을 확인

(base) C:₩WINDOWS₩system32>**python --version**
Python 3.8.5

02 내 컴퓨터에 가상 환경을 만들기

가상 환경 리스트 확인
(base) C:₩WINDOWS₩system32>conda env list

==========
(base) C:₩WINDOWS₩system32>conda env list
conda environments:
#
base * C:₩Users₩front₩anaconda3
==========

가상 환경 만들기 및 가상 환경 활성화 시키기

가상 환경 만들기
- 파이썬 버전은 3.8로 지정하여 설치

(base) C:₩WINDOWS₩system32>**conda create -n tf2x python=3.8**
==========

(base) C:₩WINDOWS₩system32>conda create -n tf2x python=3.8

Collecting package metadata (current_repodata.json): done

Solving environment: done

Package Plan

environment location: C:₩Users₩front₩anaconda3₩envs₩tf2x

added / updated specs:

- python=3.8

The following packages will be downloaded:

package	build
ca-certificates-2020.12.8	haa95532_0	122 KB
certifi-2020.12.5	py38haa95532_0	141 KB
openssl-1.1.1i	h2bbff1b_0	4.8 MB
pip-20.3.3	py38haa95532_0	1.8 MB
setuptools-51.0.0	py38haa95532_2	741 KB
vc-14.2	h21ff451_1	8 KB
vs2015_runtime-14.27.29016	h5e58377_2	1007 KB
wheel-0.36.2	pyhd3eb1b0_0	33 KB
	Total:	8.6 MB

The following NEW packages will be INSTALLED:

ca-certificates	pkgs/main/win-64::ca-certificates-2020.12.8-haa95532_0
certifi	pkgs/main/win-64::certifi-2020.12.5-py38haa95532_0
openssl	pkgs/main/win-64::openssl-1.1.1i-h2bbff1b_0
pip	pkgs/main/win-64::pip-20.3.3-py38haa95532_0
python	pkgs/main/win-64::python-3.8.5-h5fd99cc_1
setuptools	pkgs/main/win-64::setuptools-51.0.0-py38haa95532_2
sqlite	pkgs/main/win-64::sqlite-3.33.0-h2a8f88b_0
vc	pkgs/main/win-64::vc-14.2-h21ff451_1
vs2015_runtime	pkgs/main/win-64::vs2015_runtime-14.27.29016-h5e58377_2
wheel	pkgs/main/noarch::wheel-0.36.2-pyhd3eb1b0_0
wincertstore	pkgs/main/win-64::wincertstore-0.2-py38_0
zlib	pkgs/main/win-64::zlib-1.2.11-h62dcd97_4

Proceed ([y]/n)? y <- y를 선택 후 진행.

==========

가상 환경 활성화 시키기

done

#

To activate this environment, use

#

 # $ conda activate tf2x # 가상 환경 활성화

#

To deactivate an active environment, use

#

 # $ conda deactivate # 가상 환경 비 활성화

가상 환경 활성화 시키기

(base) C:₩WINDOWS₩system32>**conda activate tf2x**

(tf2x) C:₩WINDOWS₩system32>

03 내 컴퓨터에 tensorflow와 keras를 설치하기

tensorflow 설치하기

(tf2x) C:₩WINDOWS₩system32>**pip install tensorflow**

==========

(tf2x) C:₩WINDOWS₩system32>**pip install tensorflow**

Collecting tensorflow

Downloading tensorflow-2.4.0-cp38-cp38-win_amd64.whl (370.7 MB)

|████████████████████████████████| 370.7 MB 13 kB/s

Requirement already satisfied: wheel~=0.35 in c:₩users₩front₩anaconda3₩envs₩tf2x₩lib₩site-packages (from tensorflow) (0.36.2)

Collecting gast==0.3.3

Downloading gast-0.3.3-py2.py3-none-any.whl (9.7 kB)

Collecting absl-py~=0.10

Downloading absl_py-0.11.0-py3-none-any.whl (127 kB)

|████████████████████████████████| 127 kB 6.8 MB/s

Collecting astunparse~=1.6.3

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....

Successfully built termcolor wrapt

Installing collected packages: urllib3, pyasn1, idna, chardet, six, rsa, requests, pyasn1-modules, oauthlib, cachetools, requests-oauthlib, google-auth, werkzeug, tensorboard-plugin-wit, protobuf, numpy, markdown, grpcio, google-auth-oauthlib, absl-py, wrapt, typing-extensions, termcolor, tensorflow-estimator, tensorboard, opt-einsum, keras-preprocessing, h5py, google-pasta, gast, flatbuffers, astunparse, tensorflow

(tf2x) C:₩WINDOWS₩system32>

추가 라이브러리 설치

keras, seaborn, pandas, jupyter, matplotlib, scikit-learn

[명령어] pip install keras seaborn pandas jupyter matplotlib scikit-learn

---

(tf2x) C:₩WINDOWS₩system32>pip install keras seaborn pandas jupyter matplotlib scikit-learn

Collecting jupyter

  Downloading jupyter-1.0.0-py2.py3-none-any.whl (2.7 kB)

Collecting keras

  Downloading Keras-2.4.3-py2.py3-none-any.whl (36 kB)

Requirement already satisfied: h5py in c:₩users₩front₩anaconda3₩envs₩tf2x₩lib₩site-packages (from keras) (2.10.0)

Requirement already satisfied: numpy>=1.9.1 in c:₩users₩front₩anaconda3₩envs₩tf2x₩lib₩site-packages (from keras) (1.19.4)

Collecting scipy>=0.14

  Downloading scipy-1.5.4-cp38-cp38-win_amd64.whl (31.4 MB)

     |████████████████████████████████| 31.4 MB 6.4 MB/s

Collecting matplotlib

  Downloading matplotlib-3.3.3-cp38-cp38-win_amd64.whl (8.5 MB)

     |████████████████████████████████| 8.5 MB 3.3 MB/s

....

....

....

Successfully built pyrsistent pandocfilters

Installing collected packages: ipython-genutils, traitlets, pywin32, pyrsistent, attrs, wcwidth, tornado, pyzmq, python-dateutil, pyparsing, parso, jupyter-core, jsonschema, webencodings, pygments, pycparser, prompt-toolkit, **pickleshare**, packaging, nest-asyncio, nbformat, MarkupSafe, jupyter-client, jedi, decorator, colorama, backcall, async-generator, testpath, pywinpty, pandocfilters, nbclient, mistune, jupyterlab-pygments, jinja2, ipython, entrypoints, defusedxml, cffi, bleach, terminado, Send2Trash, prometheus-client, nbconvert, **ipykernel**, argon2-cffi, notebook, widgetsnbextension, qtpy, pytz, **pillow**, kiwisolver, cycler, threadpoolctl, scipy, qtconsole, pyyaml, **pandas**, **matplotlib**, jupyter-console, joblib, ipywidgets, **seaborn**, **scikit-learn**, **keras**, jupyter

Successfully installed MarkupSafe-1.1.1 Send2Trash-1.5.0 argon2-cffi-20.1.0 async-generator-1.10 attrs-20.3.0 backcall-0.2.0 bleach-3.2.1 cffi-1.14.4 colorama-0.4.4 cycler-0.10.0 decorator-4.4.2 defusedxml-0.6.0 entrypoints-0.3 ipykernel-5.4.2 ipython-7.19.0 ipython-genutils-0.2.0 ipywidgets-7.5.1 jedi-0.17.2 jinja2-2.11.2 joblib-1.0.0 jsonschema-3.2.0 jupyter-1.0.0 jupyter-client-6.1.7 jupyter-console-6.2.0 jupyter-core-4.7.0 jupyterlab-pygments-0.1.2 keras-2.4.3 kiwisolver-1.3.1 matplotlib-3.3.3 mistune-0.8.4 nbclient-0.5.1 nbconvert-6.0.7 nbformat-5.0.8 nest-asyncio-1.4.3 notebook-6.1.5 packaging-20.8 pandas-1.1.5 pandocfilters-1.4.3 parso-0.7.1 pickleshare-0.7.5 pillow-8.0.1 prometheus-client-0.9.0 prompt-toolkit-3.0.8 pycparser-2.20 pygments-2.7.3 pyparsing-2.4.7 pyrsistent-0.17.3 python-dateutil-2.8.1 pytz-2020.4 pywin32-300 pywinpty-0.5.7 pyyaml-5.3.1 pyzmq-20.0.0 qtconsole-5.0.1 qtpy-1.9.0 scikit-learn-0.23.2 scipy-1.5.4 seaborn-0.11.1 terminado-0.9.1 testpath-0.4.4 threadpoolctl-2.1.0 tornado-6.1 traitlets-5.0.5 wcwidth-0.2.5 webencodings-0.5.1 widgetsnbextension-3.5.1

추가 설치

pip install --upgrade pywin32==225

python C:₩Users₩front₩anaconda3₩Scripts₩pywin32_postinstall.py -install

04 주피터 노트북 실행 후, 기본 환경 확인

(tf2x) C:₩WINDOWS₩system32>jupyter notebook

```
import sys
import tensorflow as tf
import keras

import matplotlib as mpl
import seaborn as sns
import numpy as np
import sklearn as sk
import pandas as pd
```

05 파이썬 버전 및 라이브러리 버전 확인

```
print(sys.version)
print(tf.__version__)
print(keras.__version__)

print(mpl.__version__)
print(sns.__version__)
print(np.__version__)
print(sk.__version__)
print(pd.__version__)
```

```
### 파이썬 버전 및 딥러닝 라이브러리 확인
```

```
print(sys.version)
print(tf.__version__)
print(keras.__version__)
```

```
3.8.5 (default, Sep  3 2020, 21:29:08) [MSC v.1916 64 bit (AMD64)]
2.4.0
2.4.3
```

```
print(mpl.__version__)
print(sns.__version__)
```

```
print(np.__version__)
print(sk.__version__)
print(pd.__version__)
```

```
3.3.3
0.11.1
1.19.4
0.23.2
1.1.5
```