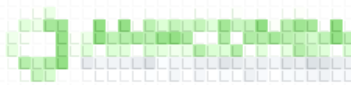


Windows 7,8,10 tensorflow with Anaconda3 install (python 3.5. ver)

Only 64bit

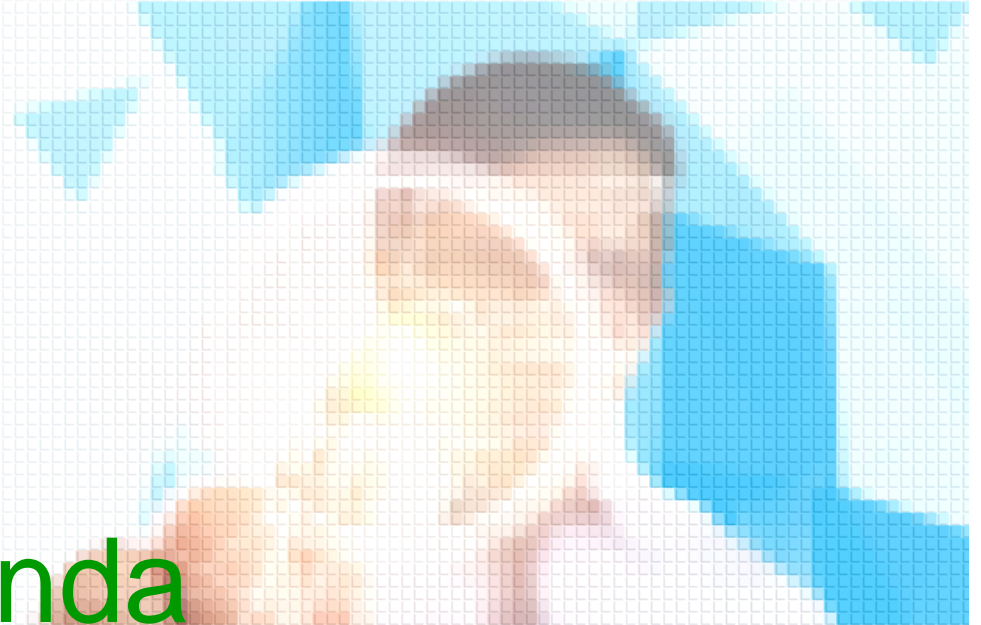
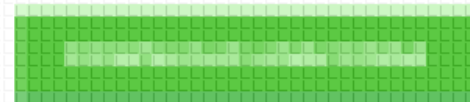
Windows tensorflow
Anaconda3
2017 08 최종



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WHO CHANGE THE WORLD**

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Install Anaconda

Get started

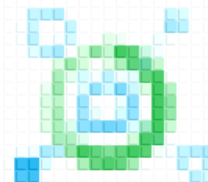
Get started



Get started with Anaconda today

Get started

Get started with Anaconda today



Get started with Anaconda today

Get started

Get started with Anaconda today



Get started with Anaconda today

Install Anaconda - 1 (download)

#반드시 64bit 환경에서만 사용 가능하다, 아래 그림이나 Uri에 링크가 걸려있다#

Anaconda3(4.2.0 ver) 와 Git 설치를 통해 기본적인 python을 사용할 수 있게 된다.

Tensorflow 가 python 3.5 ver 에서만 지원을 하기 때문에 Anaconda3 4.2.0ver을
사용해야 한다.

설치과정 약 30분 ~ 1시간



https://repo.continuum.io/archive/.winzip/Anaconda3-4.2.0-Windows-x86_64.zip

Install Anaconda - 1 (download)

홈페이지에 가게되면 '3.6'버전이 나오게 되는데
Tensorflow 를 실행하는데 필요한 버전은 '3.5.'

[Changelog](#)

1. Download the installer
2. Optional: Verify data integrity with [MD5 or SHA-256](#) [More info](#)
3. Double-click the **.exe** file to install Anaconda and follow the instructions on the screen

Behind a firewall? Use these [zipped Windows installers](#)

여기를 클릭해서 들어가 3.5 ver을 다운받는다.

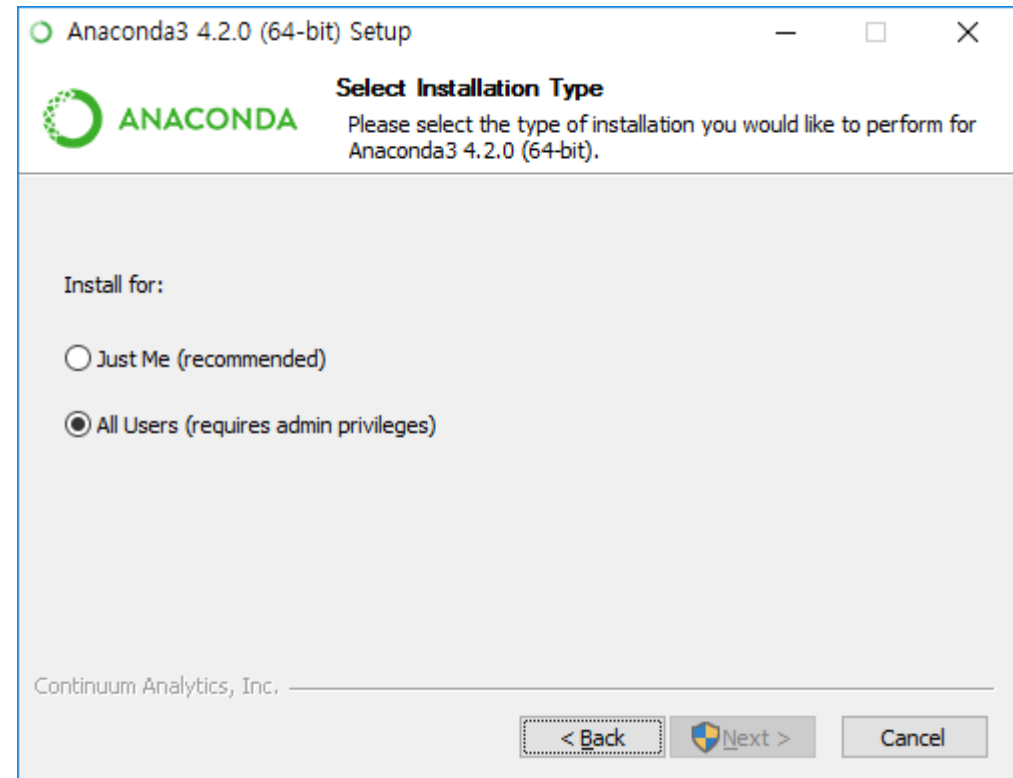
| Filename | Size | Last Modified | M |
|--|--------|---------------------|---|
| ../ | - | | < |
| Anaconda2-4.3.1-Windows-x86.zip | 336.9M | 2017-03-10 11:44:41 | b |
| Anaconda2-4.3.1-Windows-x86_64.zip | 411.3M | 2017-03-10 11:44:13 | 1 |
| Anaconda3-4.3.1-Windows-x86.zip | 345.9M | 2017-03-10 11:45:41 | d |
| Anaconda3-4.3.1-Windows-x86_64.zip | 419.7M | 2017-03-10 11:45:12 | 7 |
| Anaconda2-4.3.0.1-Windows-x86.zip | 336.0M | 2017-02-03 10:26:52 | 6 |
| Anaconda2-4.3.0.1-Windows-x86_64.zip | 410.4M | 2017-02-03 10:26:35 | 3 |
| Anaconda3-4.3.0.1-Windows-x86.zip | 345.0M | 2017-02-03 10:27:32 | f |
| Anaconda3-4.3.0.1-Windows-x86_64.zip | 418.8M | 2017-02-03 10:27:14 | 4 |
| Anaconda2-4.3.0-Windows-x86.zip | 336.0M | 2017-01-31 10:49:57 | e |
| Anaconda2-4.3.0-Windows-x86_64.zip | 410.4M | 2017-01-31 10:49:31 | 3 |
| Anaconda3-4.3.0-Windows-x86.zip | 345.0M | 2017-01-31 10:50:52 | f |
| Anaconda3-4.3.0-Windows-x86_64.zip | 418.8M | 2017-01-31 10:50:25 | e |
| Anaconda2-4.2.0-Windows-x86.zip | 322.0M | 2016-09-28 12:01:22 | b |
| Anaconda2-4.2.0-Windows-x86_64.zip | 378.8M | 2016-09-28 12:01:06 | 9 |
| Anaconda3-4.2.0-Windows-x86.zip | 331.2M | 2016-09-28 12:02:00 | d |
| Anaconda3-4.2.0-Windows-x86_64.zip | 389.1M | 2016-09-28 12:01:43 | 5 |
| Anaconda2-4.1.1-Windows-x86.zip | 284.1M | 2016-07-08 11:32:17 | b |
| Anaconda2-4.1.1-Windows-x86_64.zip | 339.2M | 2016-07-08 11:32:02 | 6 |

Install Anaconda - 2 (install start)

Anaconda3 설치시
관리자 권한 설정을 위해
All Users로 설치한다.

그다음은 Next Next

(이후의 설치에서 불필요한
권한 설정을 하지 않기 위해)





Git 설치 (설치하지 않아도 Tensorflow 사용가능)

Git is a **distributed version control** designed to handle everything from small to very large projects with speed and efficiency.

<https://git-scm.com/download/win>

Git is **easy to learn** and has a **tiny footprint** with **lightning fast performance**. It outclasses SCM tools like Subversion, CVS, Perforce and ClearCase with features like **cheap local branching**, **convenient staging areas**, and **multiple workflows**.



Learn Git in your browser for free with **Try Git**.

온라인상에 Github 소스들을 다운받기 위해 필요.

위의 **링크**나 **그림**을 클릭해도 다운로드 경로로 들어갈 수 있다.

Git 을 통해 Github 사이트의 데이터들을 다운로드 할 수 있다.

Q, download version 2.12.2

Downloading Git



Your download is starting...

You are downloading the latest (**2.12.2**) **64-bit** version of **Git for Windows**. This is the most recent **maintained build**. It was released **6 days ago**, on 2017-04-05.

If your download hasn't started, [click here to download manually](#).

Other Git for Windows downloads

Git for Windows Setup

32-bit Git for Windows Setup.

64-bit Git for Windows Setup.

Git for Windows Portable ("thumbdrive edition")

32-bit Git for Windows Portable.

64-bit Git for Windows Portable.

The current source code release is version **2.12.2**. If you want the newer version, you can build it from [the source code](#).

Tensorflow cpu
※ cpu와 gpu중 하나만 설치

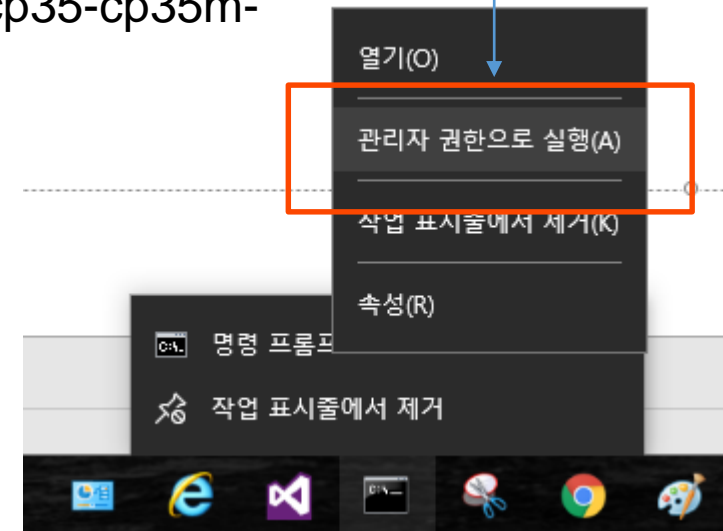
Windows Tensorflow(cpu) 설치

Cmd 창을 열어 아래의 커맨드를 실행해야 된다.
(실행하기 전에 반드시 설치하는 관리자 권한이 필요하다)

Cpu : pip install tensorflow

pip install --ignore-installed --upgrade

https://storage.googleapis.com/tensorflow/windows/cpu/tensorflow-1.0.1-cp35-cp35m-win_amd64.whl

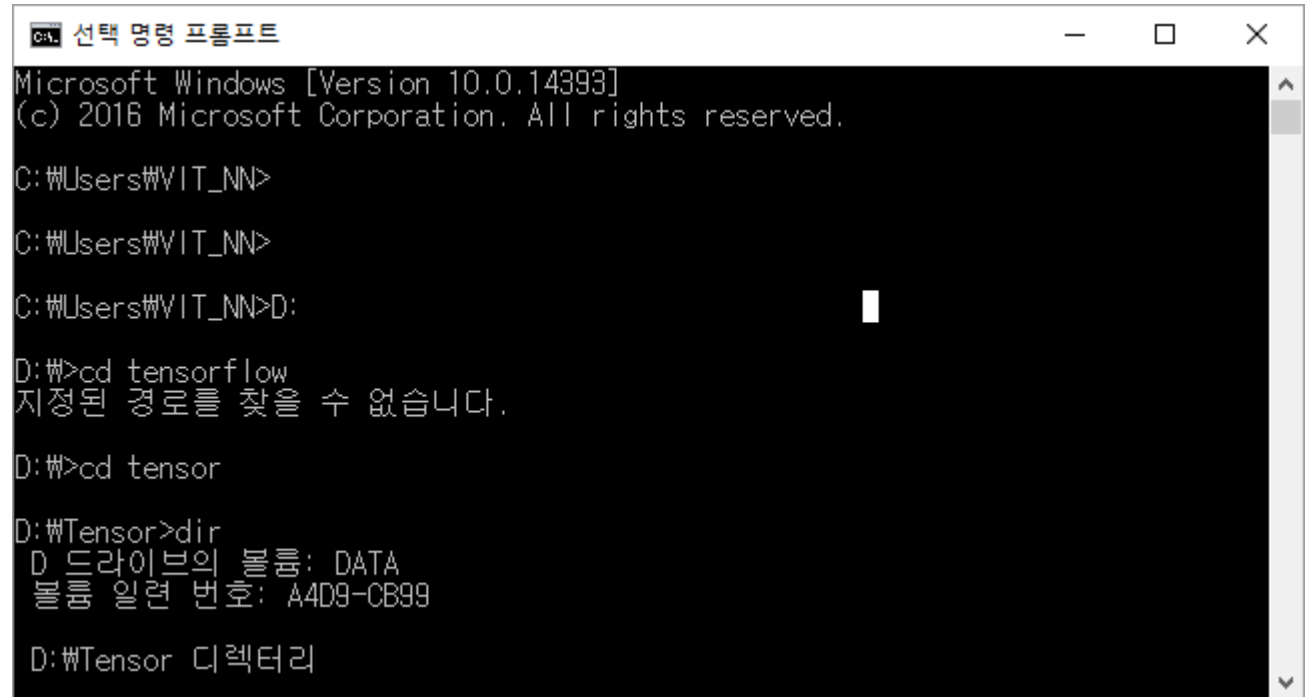


Windows Tensorflow (cpu) 설치

오른쪽 그림처럼 아무 경로에서 설치를 시작해도 **Anaconda**에서 자동적으로 설치 경로를 잡아주기 때문에 어디서든 설치하면 된다.

다만, 앞으로 필요한 데이터들을 관리하기 위해 자신이 지정하는 특정 위치에서 시작하는 것이 좋다.

폴더이동 명령어 : `cd [폴더 경로]`
폴더 한칸뒤로 : `cd..`
드라이브 변경 : [해당 드라이브]:



```
선택 명령 프롬프트
Microsoft Windows [Version 10.0.14393]
(c) 2016 Microsoft Corporation. All rights reserved.

C:\Users\VIT_NN>
C:\Users\VIT_NN>
C:\Users\VIT_NN>D:
D:\>cd tensorflow
지정된 경로를 찾을 수 없습니다.
D:\>cd tensor
D:\Tensor>dir
D 드라이브의 볼륨: DATA
볼륨 일련 번호: A4D9-CB99

D:\Tensor 디렉터리
```

Tensorflow gpu
※ cpu와 gpu중 하나만 설치

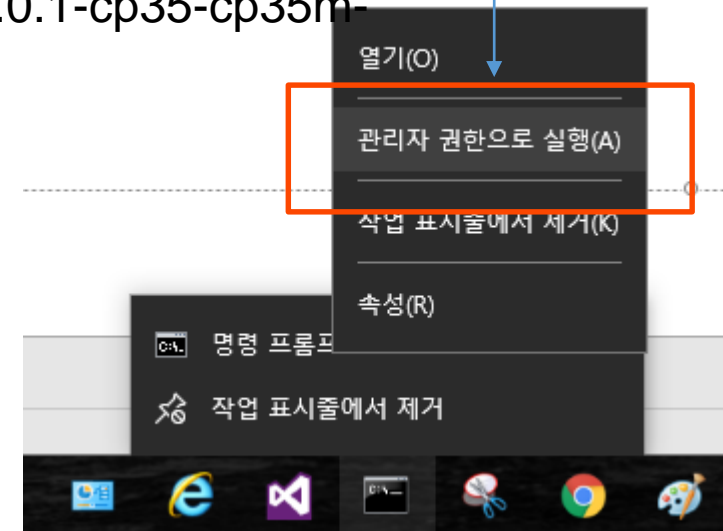
Windows Tensorflow Gpu 설치

Cmd 창을 열어 아래의 커맨드를 실행해야 된다.
(실행하기 전에 반드시 설치하는 관리자 권한이 필요하다)

Gpu : pip install tensorflow-gpu

pip install --ignore-installed --upgrade

https://storage.googleapis.com/tensorflow/windows/gpu/tensorflow_gpu-1.0.1-cp35-cp35m-win_amd64.whl



Windows Tensorflow Gpu 설치 - 2

2가지를 설치해야 된다.

1. CUDA® Toolkit 8.0

[NVIDIA's documentation](#) →

아래 그림처럼 ver에 맞게 설정하고
다운로드 설치를 하면 된다.

1. Introduction

CUDA® is a parallel computing platform and programming model invented by NVIDIA. It enables dramatic increases in computing performance by harnessing the power of the GPU.

CUDA was developed with several design goals in mind:

- Provide a small set of extensions to standard programming languages, like C, that enable a significant reduction in development time on their implementation.
- Support heterogeneous computation where applications use both the CPU and GPU. Serial processing and GPU processing are treated as separate devices that have their own memory spaces. This co

CUDA-capable GPUs have hundreds of cores that can collectively run thousands of computing threads and share data without sending it over the system memory bus.

This guide will show you how to install and check the correct operation of the CUDA development to

1.1. System Requirements

tem, you will need the following installed:

PU

in of Microsoft Windows

in of Microsoft Visual Studio

toolkit (available at <http://developer.nvidia.com/cuda-downloads>)

the currently supported Windows operating systems and versions

Select Target Platform ⓘ

Click on the green buttons that describe your target platform. Only supported platforms will be shown.

| | | | | | | |
|------------------|---------------|-------------|---------|-------------|----------------|----------------|
| Operating System | Windows | Linux | Mac OSX | | | |
| Architecture ⓘ | x86_64 | | | | | |
| Version | 10 | 8.1 | 7 | Server 2016 | Server 2012 R2 | Server 2008 R2 |
| Installer Type ⓘ | exe (network) | exe (local) | | | | |

Windows Tensorflow Gpu 설치 - 3

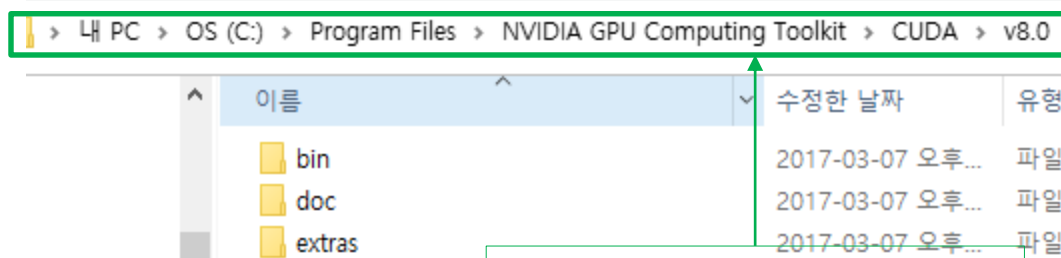
2. cuDNN v5.1

[NVIDIA's documentation](#) →

하지만 회원가입을 해야 하기 때문에
번거로운 작업 없이 아래의 링크로 다운
https://drive.google.com/file/d/0B_AgfGkstx4kdnPQxCHBuakQxOG8/view?usp=sharing
그리고

bin
include
lib

이 파일들을



여기 위치에 복사한다

The NVIDIA CUDA® Deep Neural Network library (cuDNN) is a GPU-accelerated library of primitives for **deep neural networks**. cuDNN provides highly tuned implementations for standard routines such as forward and backward convolution, pooling, normalization, and activation layers. cuDNN is part of the **NVIDIA Deep Learning SDK**.

Deep learning researchers and framework developers worldwide rely on cuDNN for high-performance GPU acceleration. It allows them to focus on training neural networks and developing software applications rather than spending time on low-level GPU performance tuning. cuDNN accelerates widely used deep learning frameworks, including **Caffe**, **TensorFlow**, **Theano**, **Torch**, and **CNTK**. See **supported frameworks** for more details. cuDNN is free available to members of the **Accelerated Computing Developer Program**

Download



Tensorflow 설치 과정에서 Error 해결

Windows Tensorflow 설치 Error

if you have Cannot remove entries from nonexistent file \anaconda32\envs\tst\lib\site-packages\easy-install.pth

-> typing:

```
pip install --upgrade --ignore-installed setuptools
```

(setuptools 모듈 업데이트 필요)

not a supported wheel on this platform

-> typing:

```
pip install --upgrade pip
```

(pip 모듈 업데이트 필요)

->

Delete auther python exe program
(Anaconda3 64bit ver 이외의 파이썬 실행 프로그램들과 충돌이 나기 때문에 나머지를 지우면 작동한다)

Tensorflow 설치 후 결과 화면

Windows Tensorflow 설치 과정 - cpu

```
import tensorflow as tf
Hello = tf.constant('Hello, Tensorflow!')
sess = tf.Session()
print(sess)
-> b'Hello, Tensorflow!'
```

```
C:\Users\Tiu>pip install tensorflow
Collecting tensorflow
  Downloading tensorflow-0.12.1-cp35-cp35m-win_amd64.whl (13.7MB)
    100% |#####| 13.8MB 79kB/s
Collecting protobuf>=3.1.0 (from tensorflow)
  Downloading protobuf-3.2.0-py2.py3-none-any.whl (360kB)
    100% |#####| 368kB 1.5MB/s
Requirement already satisfied (use --upgrade to upgrade): six>=1.10.0 in c:\program files\anaconda3\lib\site-packages (from tensorflow)
Requirement already satisfied (use --upgrade to upgrade): wheel>=0.26 in c:\program files\anaconda3\lib\site-packages (from tensorflow)
Requirement already satisfied (use --upgrade to upgrade): numpy>=1.11.0 in c:\program files\anaconda3\lib\site-packages (from tensorflow)
Requirement already satisfied (use --upgrade to upgrade): setuptools in c:\program files\anaconda3\lib\site-packages (from setuptools-27.2.0-py3.5.egg (from protobuf>=3.1.0->tensorflow))
Installing collected packages: protobuf, tensorflow
Successfully installed protobuf-3.2.0 tensorflow-0.12.1
You are using pip version 8.1.2, however version 9.0.1 is available.
You should consider upgrading via the 'python -m pip install --upgrade pip' command.

C:\Users\Tiu>
C:\Users\Tiu>python
Python 3.5.2 [Anaconda 4.2.0 (64-bit)] (default, Jul  5 2016, 11:41:13) [MSC v.1900 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>> import tensorflow as tf
>>> hello = tf.constant('Hello, TensorFlow!')
>>> sess = tf.Session()
>>> print(sess.run(hello))
b'Hello, TensorFlow!'
>>> _
```

Windows Tensorflow 설치 과정 - gpu

```
import tensorflow as tf
Hello = tf.constant('Hello, Tensorflow!')
sess = tf.Session()
print(sess)
-> b'Hello, Tensorflow!'
```

```

C:\Program Files\Python\Python35-32\python.exe
C:\Program Files\Python\Python35-32\python.exe
Python 3.5.2
Type "help",
>>> import tensorflow as tf
I c:\wtf_jenkins\home\workspace\release-win\device\gpu\os\windows\tensorflow\core\common_runtime\gpu\tf_gpu_device.cc:111:
>>> print(sess.run(hello))
b'Hello, Tensorflow!'
>>>

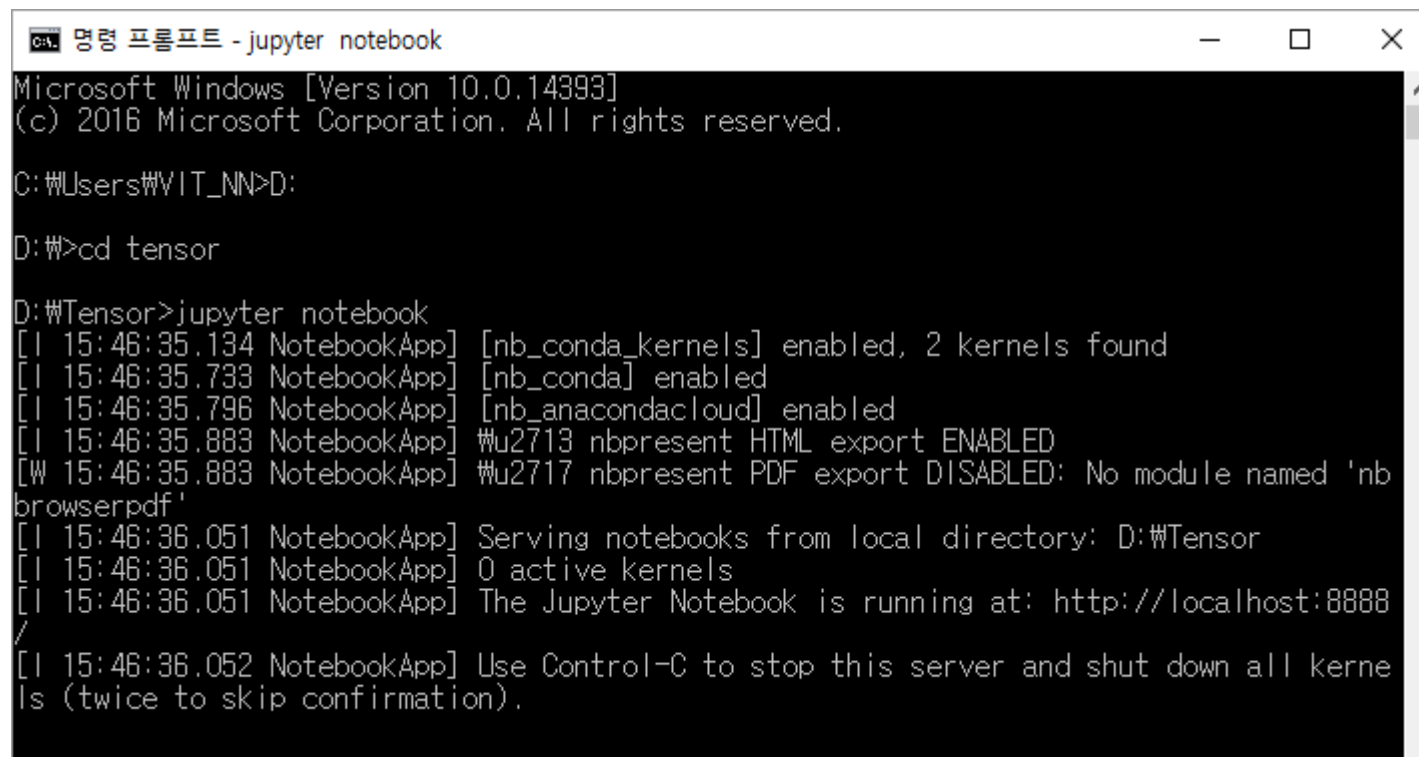
```

Windows **Tensorflow** Jupyter notebook

cmd : Jupyter notebook

Jupyter notebook 도
마찬가지로 cmd에서 위의
명령어를 치면 실행이 된다.

종료할때는 cmd 창에서
Ctrl + c 키를 눌러 정상종료
후 열려있는 notebook 창을
닫는다.



```
Microsoft Windows [Version 10.0.14393]
(c) 2016 Microsoft Corporation. All rights reserved.

C:\Users\VIT_NN>D:
D:\>cd tensor
D:\Tensor>jupyter notebook
[I 15:46:35.134 NotebookApp] [nb_conda_kernels] enabled, 2 kernels found
[I 15:46:35.733 NotebookApp] [nb_conda] enabled
[I 15:46:35.796 NotebookApp] [nb_anacondacloud] enabled
[I 15:46:35.883 NotebookApp] #u2713 nbpresent HTML export ENABLED
[W 15:46:35.883 NotebookApp] #u2717 nbpresent PDF export DISABLED: No module named 'nb
browserpdf'
[I 15:46:36.051 NotebookApp] Serving notebooks from local directory: D:\Tensor
[I 15:46:36.051 NotebookApp] 0 active kernels
[I 15:46:36.051 NotebookApp] The Jupyter Notebook is running at: http://localhost:8888
/
[I 15:46:36.052 NotebookApp] Use Control-C to stop this server and shut down all kerne
ls (twice to skip confirmation).
```

Windows **Tensorflow** Jupyter notebook

Jupyter notebook 에서의 시작
위치는 cmd 창에서 마지막 위치와
동일하다.

또한 실시간으로 파일이 업데이트
되므로

동시접근만 아니라면 충분히
변경이 가능하다

