

Tensorflow-gpu 설치 과정

1) 설치 전 준비

- CUDA, cuDNN 과 Tensorflow-gpu 호환 버전 확인
- CUDA, cuDNN , visual studio community 2017(with c++)다운로드
CUDA : <https://developer.nvidia.com/cuda-90-download-archive>
cuDNN : <https://developer.nvidia.com/cudnn> (회원 가입 필수)
visual studio : <https://visualstudio.microsoft.com/ko/vs/community/>

TF 버전	CUDA	cuDNN
TF 1.8	9	7
~	9	7
TF 1.5	9	7
TF 1.4	8	6

Tensorflow-gpu 설치 과정

2) CUDA 설치

- 각자의 윈도우 버전에 맞게 선택 후 설치
- Base installer 설치 이후 Patch 순서대로 설치

The screenshot shows the NVIDIA CUDA 9.0 download page. The 'Select Target Platform' section is at the top, with 'Windows' selected for the Operating System, 'x86_64' for Architecture, '10' for Version, and 'exe (local)' for Installer Type. Below this, the 'Download Installers for Windows 10 x86_64' section lists the available download options. The 'Base Installer' is highlighted with a red box, showing a download link for 1.4 GB. Below it, three patches are listed, each with a red box around its download link: Patch 1 (54.1 MB), Patch 2 (54.7 MB), and Patch 3 (82.3 MB). The patches are described as updates to cuBLAS 9.0, with Patch 1 adding new GEMM kernels, Patch 2 improving GEMM heuristics, and Patch 3 addressing Convolutional Seq2Seq and RNN inference performance.

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

Installer Type: exe (network), exe (local)

Download Installers for Windows 10 x86_64

The base installer is available for download below.
There are 3 patches available. These patches require the base installer to be installed first.

> Base Installer Download (1.4 GB)

Installation Instructions:

1. Double click cuda_9.0.176_win10.exe
2. Follow on-screen prompts

> Patch 1 (Released Jan 25, 2018) Download (54.1 MB)

cuBLAS Patch Update: This update to CUDA 9.0 includes new GEMM kernels optimized for the Volta architecture and improved heuristics to select GEMM kernels for given input sizes.

> Patch 2 (Released Mar 5, 2018) Download (54.7 MB)

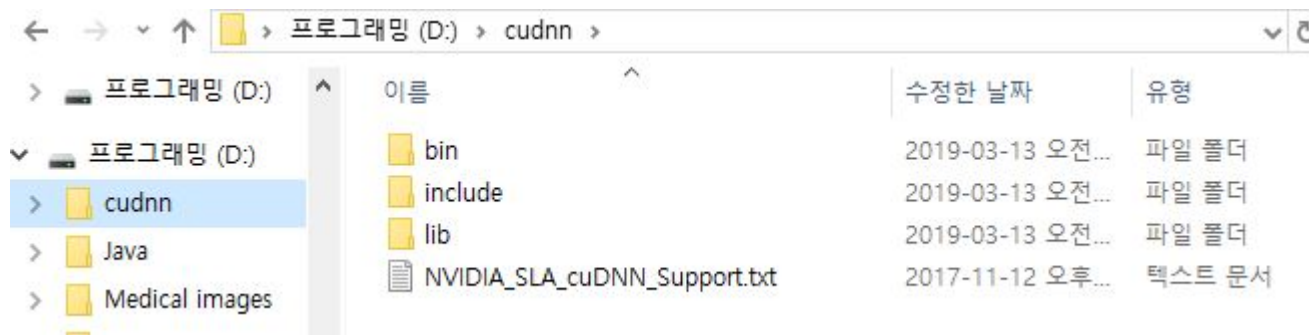
cuBLAS Patch Update: This update to CUDA 9 includes GEMM heuristics improvements to selects the most optimized algorithms for input sizes commonly used in Deep Learning RNNs. The update also includes other bug-fixes and performance enhancements.

> Patch 3 (Released Jun 7, 2018) Download (82.3 MB)

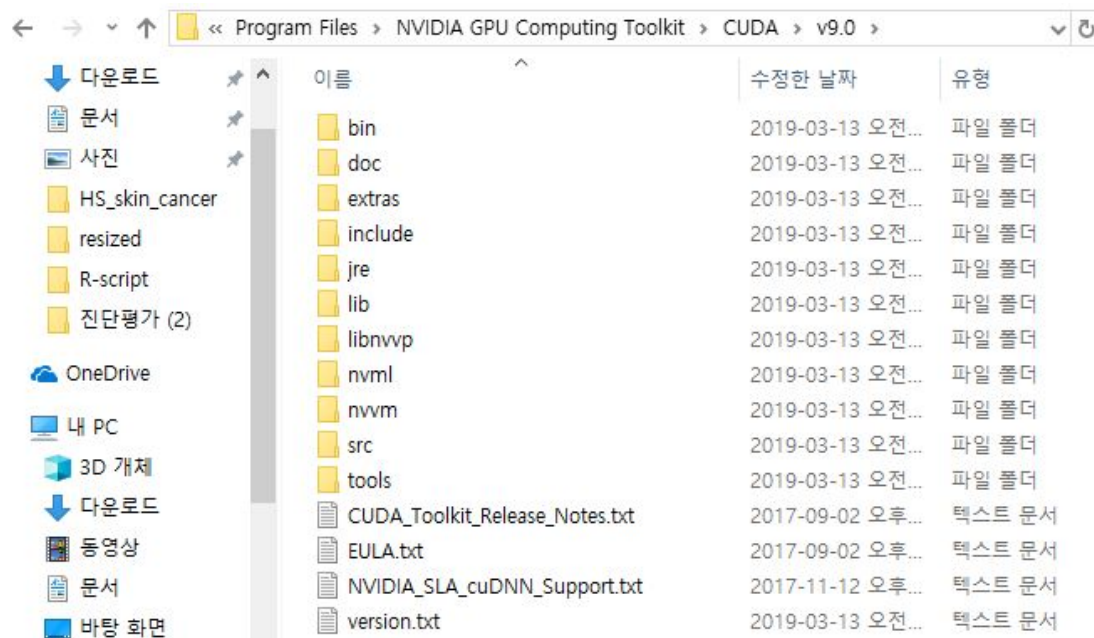
cuBLAS 9.0 Update 4 (public patch) to address Convolutional Seq2Seq and RNN inference performance

Tensorflow-gpu 설치 과정

3) cuDNN

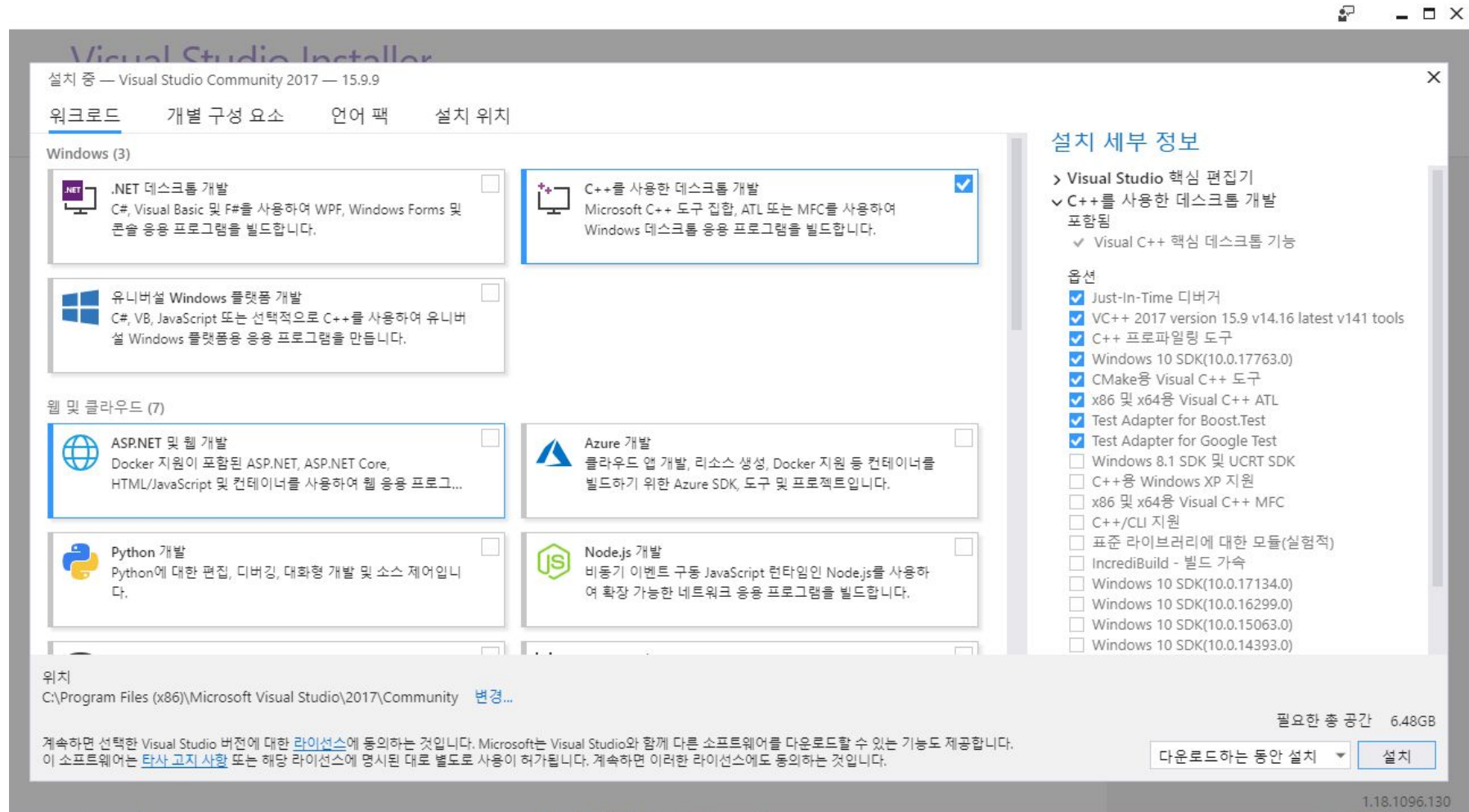


- 다운 받은 cuDNN을 압축을 푼 이후
- bin, include, lib파일을 CUDA가 설치되어 있는 폴더에 복사, 붙여 넣기



Tensorflow-gpu 설치 과정

4) visual studio community 2017(with c++) 설치



Tensorflow-gpu 설치 과정

4) Tensorflow-gpu 설치

- anaconda prompt를 실행하여 세팅된 환경을 실행
(conda activate tf_gpu)
- pip install tensorflow-gpu==1.5
(이미 cpu버전이 설치된 경우 : pip install --upgrade tensorflow-gpu==1.5)

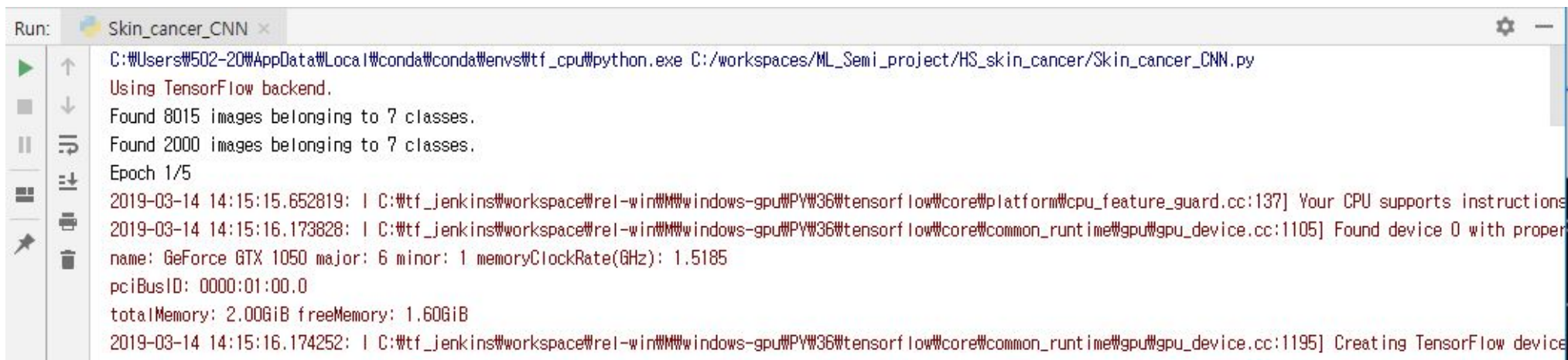
Anaconda Prompt

```
(base) C:\Users\502-20>conda activate tf_cpu  
(tf_cpu) C:\Users\502-20>pip install tensorflow-gpu=1.5_
```

Tensorflow-gpu 설치 과정

4) Tensorflow-gpu 설치 - 확인

- 잘 설치 되어있으면 다음과 같이 그림이 뜸



```
Run: Skin_cancer_CNN x
C:\Users\502-20\AppData\Local\conda\conda\envs\tf_cpu\python.exe C:/workspaces/ML_Semi_project/HS_skin_cancer/Skin_cancer_CNN.py
Using TensorFlow backend.
Found 8015 images belonging to 7 classes.
Found 2000 images belonging to 7 classes.
Epoch 1/5
2019-03-14 14:15:15.652819: I C:\tf_jenkins\workspace\rel-win\windows-gpu\PY36\tensorflow\core\platform\cpu_feature_guard.cc:137] Your CPU supports instructions
2019-03-14 14:15:16.173828: I C:\tf_jenkins\workspace\rel-win\windows-gpu\PY36\tensorflow\core\common_runtime\gpu\gpu_device.cc:1105] Found device 0 with proper
name: GeForce GTX 1050 major: 6 minor: 1 memoryClockRate(GHz): 1.5185
pciBusID: 0000:01:00.0
totalMemory: 2.00GiB freeMemory: 1.60GiB
2019-03-14 14:15:16.174252: I C:\tf_jenkins\workspace\rel-win\windows-gpu\PY36\tensorflow\core\common_runtime\gpu\gpu_device.cc:1195] Creating TensorFlow device
```

만약, “지정된 모듈을 찾을 수 없습니다.” 라는 문구가 뜰 경우,
환경변수 설정이 잘못되었거나 **cuDNN**을 잘못 올렸을 가능성이 높습니다.