1. 預先下載課程資料集與 code
   https://github.com/chihfanhsu/hand-on-dl/tree/master/code/
   https://mmnet.iis.sinica.edu.tw/~chihfan/hand-on-dl/cifar_10.zip
2. 請先試跑看看 checkblas.py 如果成功會如同以下輸出

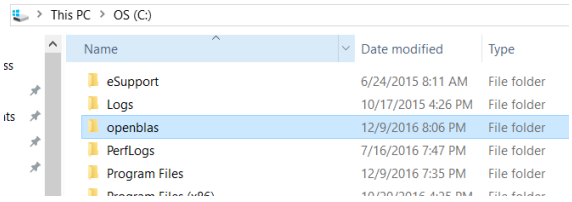
```
We executed 10 calls to gemm with a and b matrices of shapes (5000, 5000) and (5000, 5000).

Total execution time: 20.22s on CPU (with direct Theano binding to blas).

Try to run this script a few times. Experience shows that the first time is not as fast as followings calls. The differe
nce is not big, but consistent.

(C:\Program Files\Anaconda2) C:\>
```

3. 請先試跑下列網址的 CNN model，如有下列 Error 請安裝第四步驟的 OpenBLAS，如可以成功執行則不需要安裝。
   https://github.com/fchollet/keras/blob/master/examples/mnist_cnn.py

> AssertionError: AbstractConv2d Theano optimization failed: there is no implementation available supporting the requested options. Did you exclude both "conv_dnn" and "conv_gemm" from the optimizer? If on GPU, is cuDNN available and does the GPU support it? If on CPU, do you have a BLAS library installed Theano can link against?

4. 在 Windows Anaconda2 上安裝 OpenBLAS (加速 CPU 運算速度)

1. 用 conda 安裝 theano
   在 windows command line 管理者權限下鍵入 conda install theano
2. 下載 OpenBLAS
   https://mmnet.iis.sinica.edu.tw/~chihfan/openblas.zip
3. 將解壓縮後的資料夾放在 C:



4. 設定 theano 設定檔如下，並放在 C:\Users\[user name]\.theanorc.txt

```
[global]
openmp=False
device=cpu

[blas]
ldflags=-LC:\openblas -lopenblas
blas.ldflags=-LC:\openblas -lopenblas
```

5. 將 C:\openblas\include 內的檔案全部複製放進以下 Anaconda 的資料夾
   C:\Program Files\Anaconda2\include
   C:\Program Files\Anaconda2\MinGW\x86_64-w64-mingw32\include
6. 將 C:\openblas\lib 內的檔案全部複製放進
   C:\Program Files\Anaconda2\MinGW\x86_64-w64-mingw32\lib
7. 將 C:\Users\[user name]\AppData\Local\Theano 資料夾內的檔案全都刪除