

Starting the lab on your own computer

Please read to the end before starting

Setting up the environment

This only needs to be done once

Miniconda — Conda document x

docs.conda.io/en/latest/miniconda.html

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Miniconda

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Help and support

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Conda license

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Windows installers

Windows

Python version	Name	Size	SHA256 hash
Python 3.8	Miniconda3 Windows 64-bit	57.0 MiB	4fa22bba0497babb5b6608cb8843545372a99f5331c8120099ae1d803f627c61
	Miniconda3 Windows 32-bit	54.2 MiB	9c2ef76bae97246c85c206733ca30fd1feb8a4b3f90a2a511fea681ce7ebc661
Python 2.7	Miniconda2 Windows 64-bit	54.1 MiB	6973025404832944e074bf02bda8c4594980eed4707bb51baa8fbdab4bf326c
	Miniconda2 Windows 32-bit	47.7 MiB	c8049d26f8b6b954b57bcd4e99ad72d1ffa13f4a6b218e64e641504437b2617b

MacOSX installers

MacOSX

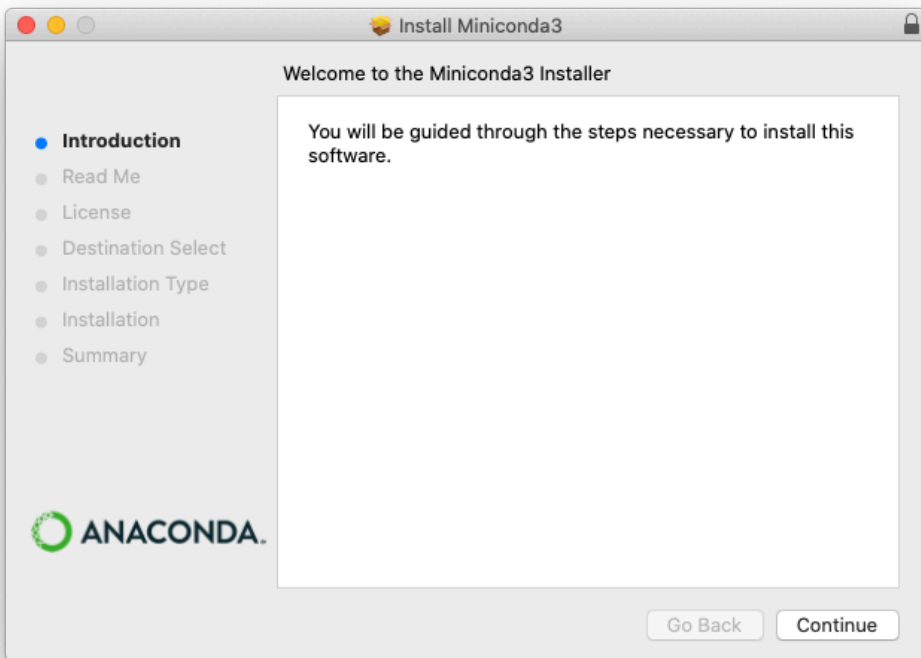
Python version	Name	Size	SHA256 hash
Python 3.8	Miniconda3 MacOSX 64-bit bash	54.5 MiB	a9ea0afba55b5d872e01323d495b649eac8ff4ce2ea098fb4c357b6139fe6478
	Miniconda3 MacOSX 64-bit pkg	62.0 MiB	b06f3bf3cffa9b53695c9c3b8da05bf583bc7047d45b074492f154d85e317fa
Python 2.7	Miniconda2 MacOSX 64-bit bash	40.3 MiB	0e2961e20a2239c140766456388beba6630f0c869020d2bd1870c3d040980b45
	Miniconda2 MacOSX 64-bit pkg	48.4 MiB	9ca4313e8162a939c7a5a4f48d657722594f8db9a98472803d63c3a7f66fa1da

Linux installers

Linux

Python version	Name	Size	SHA256 hash
Python 3.8	Miniconda3 Linux 64-bit	89.9 MiB	1314b90489f154602fd794accfc90446111514a5a72fe1f71ab83e07de9504a7
Python 3.7	Miniconda3 Linux 32-bit	62.7 MiB	f387eded3fa4ddc3104b7775e62d59065b30205c2758a8b86b4c27144adafcc4
Python 2.7	Miniconda2 Linux 64-bit	48.7 MiB	b820dde1a0ba868c4c948fe6ace7300a252b33b5befd078a15d4a017476b8979
	Miniconda2 Linux 32-bit	39.0 MiB	2e20ac4379ca5262e7612f84ad26b1a2f2782d0994facdecdb28e0baf51749979

Download the right version of Miniconda for your OS.



Install Miniconda. The default settings should be fine.

Mail - David Abramian - Outlook x My virtual machines - Azure La x Neural Networks and Learning x

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Course documents > Assignments > Lab_2 > files

Name v	Modified v	Modified By v	Version v	Description v
azure_launch_jupyter.bat	16 minutes ago	David Abramian	1.0	
azure_launch_jupyter.sh	16 minutes ago	David Abramian	1.0	
lab_gpu.yml	17 minutes ago	David Abramian	1.0	
lab_macos.yml	17 minutes ago	David Abramian	1.0	
lab_nogpu.yml	17 minutes ago	David Abramian	1.0	

Download the right yml file for your situation:

- Windows/Linux with Nvidia GPU
- Mac
- Windows/Linux without Nvidia GPU

Only the first of these will take advantage of a GPU.
The rest will run on the CPU.

(base) davab27@ad-mac0558: ~

Mac/Linux: Open a terminal.

Windows: Open “Anaconda Prompt (miniconda3)” from the start menu.

```
(base) davab27@ad-mac0558: ~ conda config --set auto_activate_base false  
(base) davab27@ad-mac0558: ~ conda deactivate  
davab27@ad-mac0558: ~
```

Mac/Linux: Without going into explanations, run the commands above. You will not have to do this again.

Windows: Skip this and go to next step.

```
davab27@ad-mac0558: ~ conda env create -f Downloads/lab_macos.yml
```

We create the conda environment used in this course by running the command above and providing the path to the yml file.


```
davab27 — conda-env create -f Downloads/lab_macos.yml — 80x24
davab27@ad-mac0558: ~ conda env create -f Downloads/lab_macos.yml
Collecting package metadata (repodata.json): done
Solving environment: | █
```

This will download and install many packages and will probably take a while.

```
davab27 — -bash — 80x24
idna-2.10      | 52 KB      | ##### | 100%
scipy-1.5.2    | 13.2 MB    | ##### | 100%
pyparsing-2.4.7 | 59 KB      | ##### | 100%
wcwidth-0.2.5  | 29 KB      | ##### | 100%
python-3.7.7   | 19.8 MB    | ##### | 100%
bleach-3.2.1   | 112 KB     | ##### | 100%
graphite2-1.3.14 | 80 KB     | ##### | 100%
zipp-3.4.0     | 15 KB      | ##### | 100%
pandocfilters-1.4.3 | 14 KB     | ##### | 100%
send2trash-1.5.0 | 14 KB     | ##### | 100%
jedi-0.18.0    | 898 KB     | ##### | 100%
Preparing transaction: done
Verifying transaction: done
Executing transaction: done
#
# To activate this environment, use
#
#     $ conda activate lab
#
# To deactivate an active environment, use
#
#     $ conda deactivate

davab27@ad-mac0558: ~
```

We now have an environment with Jupyter, TensorFlow, and all the other packages we will need.

Miniconda — Conda document x Neural Networks and Learning x +

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Course documents > Assignments

📄	Name ▾	Modified ▾	Modified By ▾	Version ▾	Description ▾
📁	Lab_2	Yesterday at 17:49	David Abramian	1.0	
📄	Assignments.zip	Monday at 21:38	Martin Hultman	1.0	
📄	ComputerCompendium.pdf	Monday at 21:38	Martin Hultman	1.0	

If you don't have the assignment files already, download them from Lisam and extract them somewhere.

Launching the labs

Do this every time you want to work on the lab

davab27@ad-mac0558: ~

Mac/Linux: Open a terminal.

Windows: Open “Anaconda Prompt (miniconda3)” from the start menu.

davab27 — -bash — 80×24

```
davab27@ad-mac0558: ~ conda activate lab
```

```
(lab) davab27@ad-mac0558: ~ █
```

Activate the conda environment.

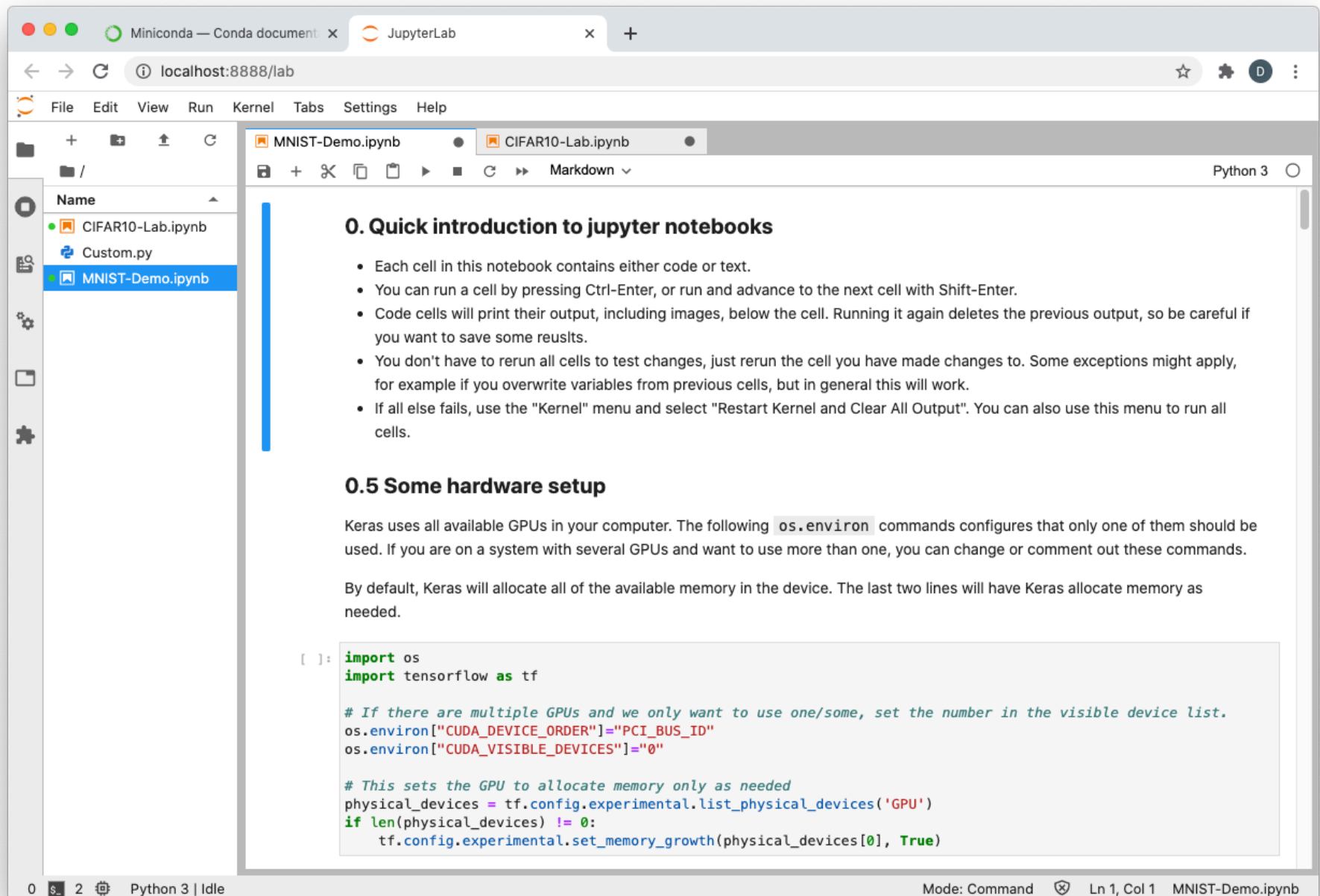
```
A2_DeepLearning — -bash — 80x24
davab27@ad-mac0558: ~ conda activate lab
(lab) davab27@ad-mac0558: ~ cd Downloads/Assignments/A2_DeepLearning/
(lab) davab27@ad-mac0558: A2_DeepLearning
```

Navigate to the folder
containing the lab files.

```
A2_DeepLearning — python3.7 ~/opt/miniconda3/envs/lab/bin/jupyter-lab — 80x24
(lab) davab27@ad-mac0558: A2_DeepLearning jupyter lab
[I 16:37:41.018 LabApp] JupyterLab extension loaded from /Users/davab27/opt/miniconda3/envs/lab/lib/python3.7/site-packages/jupyterlab
[I 16:37:41.018 LabApp] JupyterLab application directory is /Users/davab27/opt/miniconda3/envs/lab/share/jupyter/lab
[I 16:37:41.020 LabApp] Serving notebooks from local directory: /Users/davab27/Downloads/Assignments/A2_DeepLearning
[I 16:37:41.020 LabApp] Jupyter Notebook 6.1.6 is running at:
[I 16:37:41.020 LabApp] http://localhost:8888/?token=79e33b80647c8b75aa73bdad19c7482f5ce308cb8b904ad3
[I 16:37:41.020 LabApp] or http://127.0.0.1:8888/?token=79e33b80647c8b75aa73bdad19c7482f5ce308cb8b904ad3
[I 16:37:41.020 LabApp] Use Control-C to stop this server and shut down all kernels (twice to skip confirmation).
[C 16:37:41.034 LabApp]

To access the notebook, open this file in a browser:
    file:///Users/davab27/Library/Jupyter/runtime/nbserver-25096-open.html
Or copy and paste one of these URLs:
    http://localhost:8888/?token=79e33b80647c8b75aa73bdad19c7482f5ce308cb8b904ad3
    or http://127.0.0.1:8888/?token=79e33b80647c8b75aa73bdad19c7482f5ce308cb8b904ad3
```

Start Jupyter with the given command.



Jupyter will launch in a browser window automatically.

```
A2_DeepLearning — -bash — 80x24
[I 16:37:43.566 LabApp] 301 GET /lab/workspaces/auto-1/?clone (:::1) 0.720000ms
[W 16:37:44.462 LabApp] Could not determine jupyterlab build status without node
js
[I 16:37:47.174 LabApp] Kernel started: d023d290-3c45-4865-8d95-4e58b79e0519, na
me: python3
[I 16:37:47.189 LabApp] Kernel started: 2e8b0ad0-bad0-4411-8b33-7d9392ae5fe4, na
me: python3
[I 16:37:47.939 LabApp] Starting buffering for 2e8b0ad0-bad0-4411-8b33-7d9392ae5
fe4:9abb4b57-b7e7-46e7-869a-e1a4f95ba9c2
^C[I 16:48:35.044 LabApp] interrupted
Serving notebooks from local directory: /Users/davab27/Downloads/Assignments/A2_
DeepLearning
2 active kernels
Jupyter Notebook 6.1.6 is running at:
http://localhost:8888/?token=79e33b80647c8b75aa73bdad19c7482f5ce308cb8b904ad3
or http://127.0.0.1:8888/?token=79e33b80647c8b75aa73bdad19c7482f5ce308cb8b904ad
3
Shutdown this notebook server (y/[n])? ^C[C 16:48:37.056 LabApp] received signal
2, stopping
[I 16:48:37.056 LabApp] Shutting down 2 kernels
[I 16:48:37.265 LabApp] Kernel shutdown: d023d290-3c45-4865-8d95-4e58b79e0519
[I 16:48:37.265 LabApp] Kernel shutdown: 2e8b0ad0-bad0-4411-8b33-7d9392ae5fe4
[I 16:48:37.266 LabApp] Shutting down 0 terminals
(lab) davab27@ad-mac0558: A2_DeepLearning
```

You can shutdown Jupyter by pressing
[Ctrl + C] twice in the terminal.

Deleting the environment

Do this if you want once the course is finished

davab27@ad-mac0558: ~

The conda environment we use has all that you need to get involved in deep learning with TensorFlow. However, you may want to remove it eventually.

Mac/Linux: Open a terminal.

Windows: Open “Anaconda Prompt (miniconda3)” from the start menu.

```
davab27@ad-mac0558: ~ conda env remove -n lab
```

```
Remove all packages in environment /Users/davab27/opt/miniconda3/envs/lab:
```

```
davab27@ad-mac0558: ~ █
```

Remove the conda environment. This
will not delete the downloaded packages.

```
davab27@ad-mac0558: ~ conda env remove -n lab

Remove all packages in environment /Users/davab27/opt/miniconda3/envs/lab:

[davab27@ad-mac0558: ~ conda clean --all
Cache location: /Users/davab27/opt/miniconda3/pkgs
Will remove the following tarballs:

/Users/davab27/opt/miniconda3/pkgs
-----
freetype-2.10.4-ha233b18_0.conda          564 KB
llvm-openmp-10.0.0-h28b9765_0.conda      236 KB
python-graphviz-0.15-pyhd3eb1b0_0.conda   20 KB
libpng-1.6.37-ha441bb4_0.conda           262 KB
hdf5-1.10.6-hdbbcd12_0.conda              3.0 MB
harfbuzz-1.8.8-hb8d4a28_0.conda          414 KB
zipp-3.4.0-pyhd3eb1b0_0.conda             15 KB
gast-0.2.2-py37_0.conda                  154 KB
werkzeug-1.0.1-py_0.conda                240 KB
send2trash-1.5.0-pyhd3eb1b0_1.conda       14 KB
mistune-0.8.4-py37h1de35cc_0.conda        55 KB
wheel-0.36.2-pyhd3eb1b0_0.conda           33 KB
google-pasta-0.2.0-py_0.conda             46 KB
markupsafe-1.1.1-py37h1de35cc_0.conda     27 KB
```

Delete the conda packages used in the environment, freeing up about 1.5 GB of hard drive space.