

# On your device

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Prior starting, make sure to have admin rights on your device. While this is not a must-have it will make your life way easier.

## A. Basics

### 1. Install R

- <https://cran.r-project.org/bin/windows/base/>
  - We developed the code in R 3.4.1. While backward compatibility is not guaranteed, newer R releases should properly work.

### 2. Install R Studio (R IDE)

- <https://www.rstudio.com/products/rstudio/download/>

### 3. Data Manipulation

```
install.packages('tidyverse')
```

### 4. General ML package

```
install.packages('caret')
```

### 5. Others packages in support

```
install.packages(c('rmarkdown',  
                  'e1071',  
                  'mlbench',  
                  'ggthemes',  
                  'assertthat',  
                  'kernlab',  
                  'rpart',  
                  'rattle',  
                  'kknn',  
                  'randomForest',  
                  'nnet',  
                  'RSNNS',  
                  'Metrics',  
                  'AUC')  
)
```

## B. Jupyter Notebooks

In case you want to run our amazing notebooks offline.

### 1. Install the latest release of Python

- <https://www.python.org/ftp/python/3.6.5/python-3.6.5-amd64.exe> (Windows)
- <https://www.python.org/ftp/python/3.6.5/python-3.6.5-macosx10.9.pkg> (Mac OS X 10.9 and later)

Do not forget to set the following **environment variables** on your device

- *PATH* must point to the directory of python.exe (e.g. C:\User\FolderWhereYouInstalledPython)
- *PATH* must point to the directory of python.exe (e.g. C:\User\FolderWhereYouInstalledPython\scripts)

And, in case you are working on a corporate device:

- set *HTTP\_PROXY* to [http://YOUR\\_ID:YOUR\\_UNIDIR\\_PWD@proxymil.internal.unicredit.eu:3128/](http://YOUR_ID:YOUR_UNIDIR_PWD@proxymil.internal.unicredit.eu:3128/)
- and *HTTPS\_PROXY* to [https://YOUR\\_ID:YOUR\\_UNIDIR\\_PWD@proxymil.internal.unicredit.eu:3128/](https://YOUR_ID:YOUR_UNIDIR_PWD@proxymil.internal.unicredit.eu:3128/)

### 2. Install visual Studio Build Tools

- <https://www.visualstudio.com/it/thank-you-downloading-visual-studio/?sku=BuildTools&rel=15>

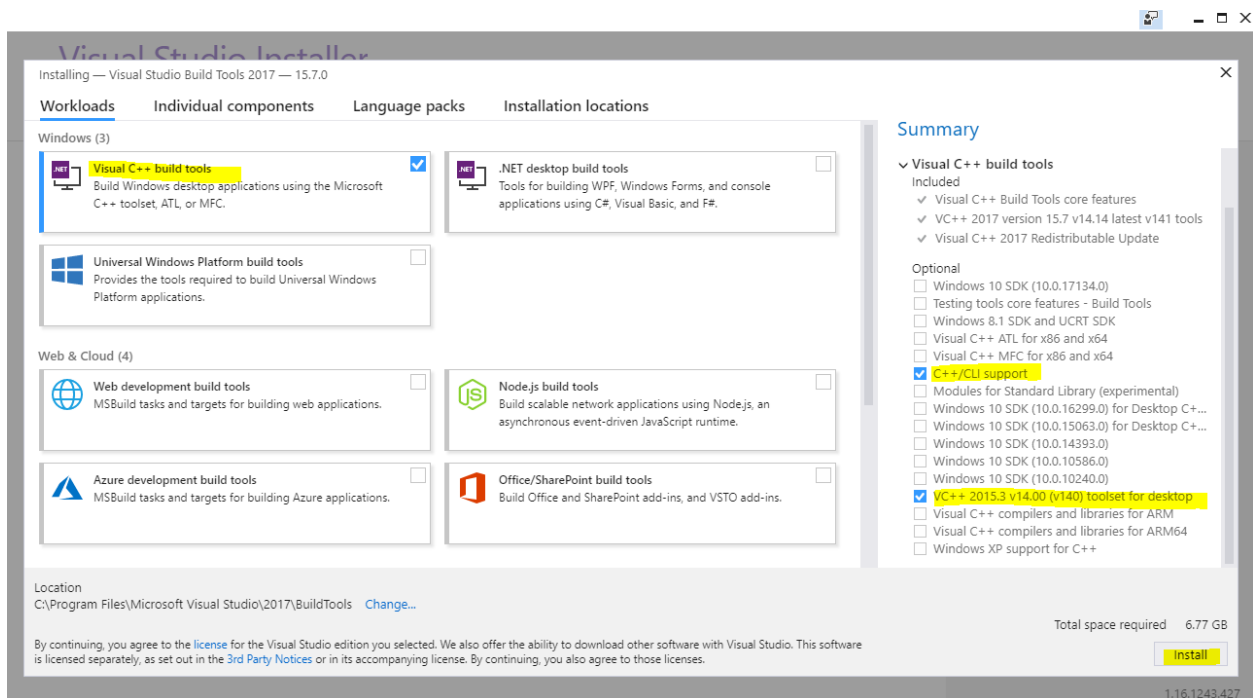


Figure 1:

### 3. From the CMD line (opened as administrator)

- If you wish to use jupyter notebooks

```
pip install jupyter
```

- If you prefer jupyterlab instead

```
pip install jupyterlab
```

#### 4. Configure stuff in R

Do not forget to set the following **environment variables** on your device

- *PATH* must point to the directory of R.exe (e.g. C:\Program Files\R\R-3.4.1\bin)

```
install.packages(c('repr',  
                  'IRdisplay',  
                  'evaluate',  
                  'crayon',  
                  'pbdZMQ',  
                  'devtools',  
                  'uuid',  
                  'digest'))
```

- Once you have installed the required packages, run this:

```
devtools::install_github('IRkernel/IRkernel')  
IRkernel::installspec(user = FALSE)
```

- **Only if** the command above did not work, please download and unzip this and run the following:

```
devtools::install('C:\whateverFolderYouHaveUnzippedTheFile\IRKernel')  
IRkernel::installspec(user = FALSE)
```

#### 5. From the CMD line (again, opened as administrator)

- Be sure to be in the right hard drive

```
C:
```

- Download the source files and unzip.
- Start jupyter/jupyterlab (a browser window should magically pop up). From there, you can source the .ipynb in the folder where you have downloaded it

```
jupyter-notebook  
jupyter-lab
```

- To end the jupyter session (once you are done), hit CTRL+C twice in the CMD line

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## C. Neural Networks

Requires Python installation (see B.)

### 1. 64-bit OS

Sorry, this is a must have.

## 2. Interface R - Python

```
install.packages('reticulate')
```

## 3. Neural Nets

```
install.packages(c('tensorflow',  
                  'keras'))  
  
tensorflow::install_tensorflow()  
keras::install_keras() # this may throw an error but work anyway
```

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## D. Cloud

In case you do not manage to execute **A.** and **B.** you can run everything from <https://rstudio.cloud>