

# Let's open the black box of deep learning!

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## Software Installation

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The best way to run Deep Learning software is to use **Jupyter Notebooks** (<http://jupyter.org/>) in a **Docker container**. For this reason, it is convenient to install Docker in the students' laptops before the tutorial.

There is full documentation on installing Docker at [docker.com](https://docs.docker.com), but in a few words, the steps are:

- Go to [docs.docker.com](https://docs.docker.com) in your browser.
- Step one of the instructions sends you to download Docker.
- Run that downloaded file to install Docker.
  - If you are using Windows, please check this information before attempting any installation:  
<https://docs.docker.com/docker-for-windows/install/#what-to-know-before-you-install>
- At the end of the install process, a whale in the top status bar indicates that Docker is running, and accessible from a terminal.
- Click the whale to get Preferences, and other options.
- Open a command-line terminal, and run some Docker commands to verify that Docker is working as expected. Some good commands to try are `docker version` to check that you have the latest release installed, and `docker ps` and `docker run hello-world` to verify that Docker is running.
- By default, Docker is set to use 2 processors. You can increase processing power for the app by setting this to a higher number in Preferences, or lower it to have Docker for Mac use fewer computing resources.
- By default, Docker is set to use 2 GB runtime memory, allocated from the total available memory on your computer. You can increase the RAM on the app to get faster performance by setting this number higher (for example to 3) or lower (to 1) if you want Docker to use less memory.

Once Docker is installed, you can download the image of this tutorial:

- In a terminal, go to your course folder and run (This operation requires a good internet connection; it will take some minutes):  
`docker pull datascienceub/deepubebiss2017`
- MacOS & Linux: Run the deepubebiss2017 image on your system:  
`docker run -it -p 8888:8888 -p 6006:6006 -v /$(pwd):/notebooks datascienceub/deepubebiss2017`
- Windows: Run the deepubebiss2017 image on your system:  
`docker run -it -p 8888:8888 -p 6006:6006 -v C:/your/course/folder:/notebooks datascienceub/deepubebiss2017`
- Once these steps have been done, you can check the installation by starting your web browser and introducing this URL:  
<http://localhost:8888>.  
Hopelly, you will see your Jupyter notebook environment!