



# Learning-based Robotics Architectures using Duckietown

## PART A

# [LRA1] Imitation Learning

In this part you will try to train a network via imitation, and consequently test its performance.

### KNOWLEDGE AND ACTIVITY GRAPH

**Requires:** Some theory about machine learning

**Requires:** A proper laptop setup.

**Results:** Get a feeling of what imitation learning is.

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## 0.1. Learning imitation learning

### Exercise 1. Imitation Learning.

For this exercise, you will get a repository that takes care of creating the environment for you. You will be required to modify a Jupyter Notebook file only, as the rest is fairly complex.

Clone the template repository:

```
$ git clone --recursive git@github.com:duckietown-ethz/lra-exercise.git
```

The `--recursive` option is important to also clone submodules, if you forgot it, run

```
$ git submodule init
$ git submodule update
```

Inside the repository, requirements

```
$ docker-compose build
$ docker-compose up
```

**Note:** The build command, will require a lot of time, but you only need to build it once.

A lot of text will pop up, connect to the notebook server, to do this, you should see an address of the form `http://127.0.0.1:8888/...`, just open the link in a web

browser. Once connected enter in the notebook directory and open the file `01-duck-ietown-imitation-learning-ipynb`, then follow the instructions in it.

When you want to interrupt the containers, press `Ctrl-C` then wait for it to gracefully stop. This will prevent many problems.