1. Set up

Download the zip file, extract it and run the executable file:

- Linux
- Mac
- Windows

2. Collect Training Data

1. Launch the simulator
2. Choose the preferred graphic quality and hit *Play!*
3. Press *CONTROLS to learn how to control the simulator*
4. Select the preferred track (the left track is the easiest)
5. Press *TRAINING MODE*
6. Press *R* to record and choose the folder you wish to save the training data to. You are ready to start driving!

3. Test your Model

Once you're satisfied that the model is making good predictions on the training and validation sets, you are ready to to test your model in the simulator!

1. Launch the simulator
2. Press *AUTONOMOUS MODE*. The car will just sit there until your Python server connects to it and provides it steering angles.
3. Start your Python server by running the following command: `python drive.py model.h5`
    - The `model.h5` file is your trained model. In Keras you can export your entire model using `model.save()` NB! Remember to export the entire model, not only the weights.

Note: Once the model is up and running in *drive.py*, you should see the car move around (and hopefully not off) the track! If your model has low mean squared error on the training and validation sets but is driving off the track, this could be because of the data collection process. It's important to feed the network examples of good driving behavior so that the vehicle stays in the center and recovers when getting too close to the sides of the road.

4. Create a Video of your Model

1. To record a video run the following command: `python drive.py model.h5 directory-name`
    - *model.h5:* your saved model file
    - *directory-name:* the directory in which to save the images seen by the agent. If the directory already exists, it'll be overwritten. The image file names saved to directory-name is a timestamp of when the image was seen. This information is used by *video.py* to create a chronological video of the agent driving.
2. To create the video run the following command: `python video.py directory-name`
    - This creates a video based on images found in the directory.
    - The name of the video will be the name of the directory followed by '.mp4'.
    - Optionally, one can specify the FPS (frames per second) of the video: `python video.py run1 --fps 48`