To run the simulation of walking robot, please go to **main.m** in our main folder.

To get different walking velocities, please go to **control_hyper_parameter.m** in the **control** folder. The parameters needed for the velocity of 0.4, 0.6, 0.8, 1.0, 1.2 and 1.5m/s have been given. When running code of specific velocity, just note out the parameters corresponding to other velocities. The defaulted parameters are for the lowest speed (0.4m/s).

To observe the discrete average velocity in each step instead of the continuous curve of v_h, you can check the command in matlab, which will output the average velocity in each step.

To add perturbation to the robot, please go to the **control.m** in the **control** folder, and remove the comment on this line of code :

```
u_ext = perturbation(q, step_number);
```

The plots for analysis will be shown according to **analyze.m** and **analyze_2.m**. If you want to observe the each plot more clearly, use the line of code in **main.m**

```
analyze_2(sln)
```

If you want to have a more intuitive observation of all plots, use the following code:

```
analyze(sln)
```