

Run instructions

Once the required software is installed (NEURON with python, OPENSIM with python)

1. Open the terminal and navigate to templates folder

```
$cd templates
```

2. Compile the neuron mod files

```
$nrnivmodl
```

3. Copy the generated x86_64 to each of open_loop and close_loop simulation folders

```
$cp -R x86_64/ ../sim_o  
$cp -R x86_64/ ../sim_c  
$cd ..
```

4. Navigate to open_loop simulation folder

```
$cd sim_o
```

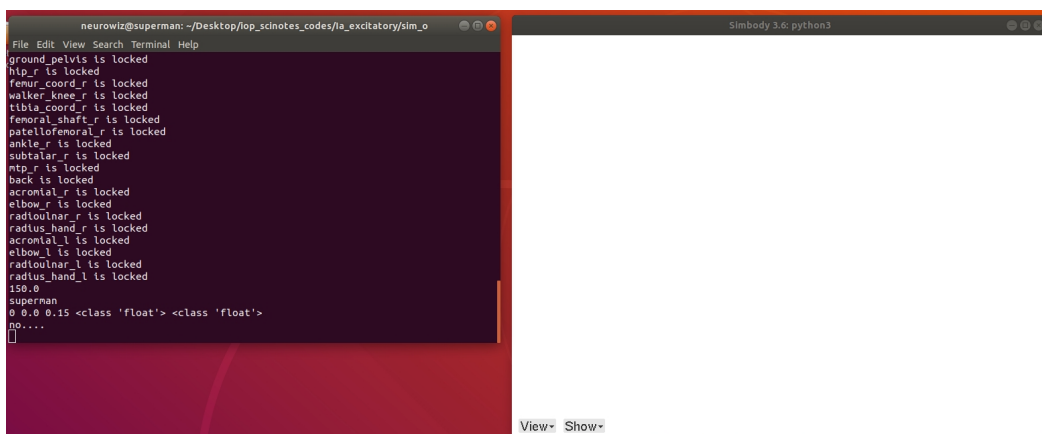
5. delete the contents of output folder

```
$cd output  
$rm *  
$cd ..
```

6. run the neuroid_osim_glue.py

```
$python neuroid_osim_glue.py
```

opensim graphics window pops-up and terminal waits for muscle activations from the neuronal simulations -see the screenshot below for reference



7. click open new tab in terminal

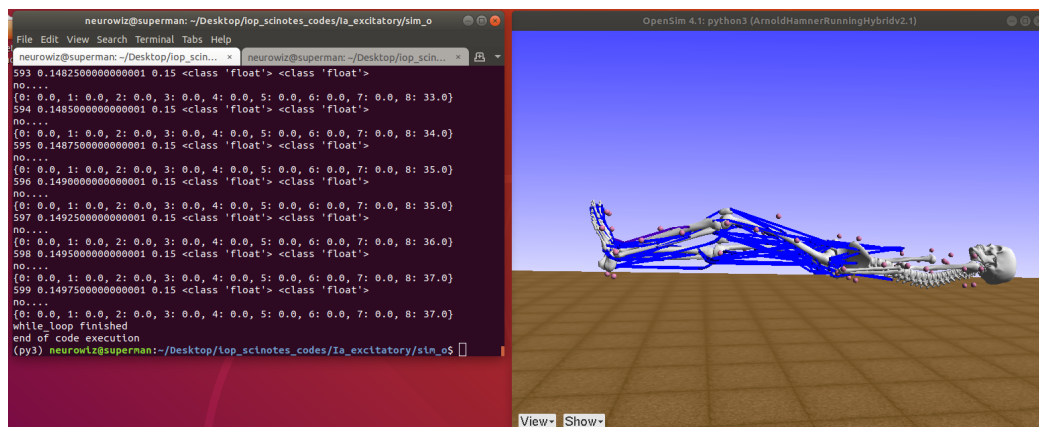
8. run main.py

```
$python main.py
```

Now the lower limb model appears in the opensim graphics window and we can see codes running on both the terminals.



Wait for both the codes to completely execute



9. Navigate to close-loop folder

```
$cd ../sim_c
```

10. Repeat steps 5,6,7,8

11. plot the output from both the simulation folders

```
$cd ../  
$python plots.py
```

python plot windows are popped up – see the screenshot below

