Instructions to generate the spinal ipsilateral lumbosacral connectome from the curated data and subsequently generate the plots shown in figure 5 that describe the muscle-muscle interactions.

Software and hardware requirements:

2. Linux desktop (preferably installed with Ubuntu)

Both code development and testing was carried out on **Ubuntu-18.04.6-LTS desktop** with intel-core i7 CPU, NVIDIA quadro P1000 graphics with16GB RAM space.

The above hardware requirements are for the indicative purposes and any desktop latest versions of ubuntu should be compatible with the current codes. We have not tested on the other linux platforms like mint os or cent os etc. But the presented codes should run if the compatible python software and required libraries are installed.

1. Python 3.7

Required libraries: ***pandas, numpy, os, seaborn, matplotlib, json, openpyxl.*** *F*or the convenience $pip freeze output is given below to sort out any missing libraries

```
certifi==2021.10.8
cycler==0.11.0
et-xmlfile==1.1.0
fonttools==4.29.1
kiwisolver==1.3.2
matplotlib==3.5.1
NEURON==7.6
numpy==1.21.4
openpyxl==3.0.9
opensim==4.1
packaging==21.3
pandas==1.3.4
Pillow==9.0.1
pygal==3.0.0
pyparsing==3.0.7
python-dateutil==2.8.2
pytz==2021.3
scipy==1.7.3
seaborn==0.11.2
six==1.16.0
```

Run instructions:

Step1: Open the terminal and run interactions_maps.py code.

```
~$ python iteraction_maps.py
```

Step2: wait for the completion of code and graph windows to pop-up.