

FOSS Python tools for geospatial analysis

Speaker: Nishadh.K.A.

Research Associate

www.urbanemissions.info

Basic workshop requirement

1. Hardware with 64 bit OS, windows 10 and Mac latest updated version to run docker software,
2. workshop is heavily dependent on docker and please ensure it is working in your computer, test docker by downloading and running the images `helloworld` and `ubuntu`
3. Google earth desktop version software
4. Quantum GIS software
5. Latest workshop Github repo folder in local-
<https://github.com/nishadhka/FOSS-Python-GeospatialAnalysis/archive/master.zip>

The workshop image set up with docker

- Download the workshop image tar file from google drive with this [link](#), do visit the workshop [repository](#) to get the latest/updated version of the docker image. The tar file is 4.6 GB in size, please checksum the downloaded tar to ensure its hash as `57e05b908790697e07f553d684bf5607`

- use docker as follows, to load the tar into docker as an image

```
docker load -i foss_pt_gsa_ubuntu_v1.tar
```

- To check the docker is loaded with images, ensure the image

```
foss-pt-gsa/foss-pt-gsa:version1 is listed docker ps
```

- To run the image

```
docker run -dit foss-pt-gsa/foss-pt-gsa:version1 bash
```

- To enter into the image bash

```
docker exec -it 9270ee5fdfe1 bash
```

- After enter into the image's bash terminal, enter following commands. the commands download the workshop github repo zip file into a working directory, then unzip it and get into the repo folder to start a Jupyter notebook server

```
cd /home/ubuntu/  
wget https://github.com/nishadhka/FOSS-Python-GeospatialAnalysis/archive/master.zip  
unzip master.zip  
cd FOSS-Python-GeospatialAnalysis  
jupyter notebook --ip 0.0.0.0 --no-browser --allow-root
```

Note down the link provided by the jupyter notebook such as example

<http://0.0.0.0:8889/?token=c8e944b8397b0bde97b4d9284e5e3ffc0136658fcca3ea1e>

- Logout from the docker image bash and in the host computer note down the image_ID of the workshop image running inside the docker by

```
docker ps
```

- Then inspect about the docker image to get to know the image's IP address. Note down the ipaddress

```
docker inspect image_ID
```

- Edit the jupyter server given link as into

<http://ipaddress:8889/?token=c8e944b8397b0bde97b4d9284e5e3ffc0136658fcca3ea1e>

- Open the link in host computer browser, it shows the Jupyter notebooks in the workshop repo and click on the file `docker_test.ipynb`, to run the notebook and execute its first cell to ensure all the libraries for the workshop is working properly

Model Evaluation and Selection with Scikit-Learn

Speaker: Jaidev Deshpande

Juxt Smart Mandate Analytical Solutions Pvt Ltd

Software prerequisites:

The participants need to have the following things installed:

1. IPython / JuPyter
2. NumPy
3. SciPy
4. scikit-learn
5. Matplotlib
6. Pandas

GPU Computing using PyOpenCL

Speaker: Aditya Bhosale

IIT Bombay

Notes on Installation instruction

1. Install numpy, jupyter
2. Install pyopencl (instructions: <https://wiki.tiker.net/PyOpenCL/Installation>)
No need to install the optional section in the instructions.
3. If you're not able to install pyopencl on your machine, follow these (<https://github.com/inducer/languages-and-codegen-tutorial#virtual-machine-image>) instructions upto step 5 to set up a virtual machine with pyopencl installed on it.
4. The workshop notebooks will be available at https://github.com/adityapb/pyopencl_tutorial by 27th November.

Next Generation Number Theory and Numeric Optimization!

Speaker- Shivam Patel

General Instructions

if Laptop== True:

2)Install MIKTeX from (<https://miktex.org/download>).

3)Python version 3.x is recommended.

else:

print("Sit back learn and enjoy")

Python Installation

The following libraries are to be install :

1)Pip

2)IPython / JuPyter (<http://jupyter.readthedocs.io/en/latest/install.html>)

3)Numpy (pip install numpy)

4)Scipy (pip install scipy):For Ubuntu) (For Windows :
<https://www.youtube.com/watch?v=-lIHYUMH9Dg>)

5)Matplotlib (pip install matplotlib)

6)SymPy (pip install sympy)

7)Nummaster (pip install nummaster)

You could go to :https://github.com/Shivamshaiv/IITB_Scipy2017

Download and extract the repo and then in the same directory run : pip install -r installthem.txt