Lecture 01

Python/Jupyter Crash Course

2024-08-14

Computer Vision for Geosciences

VNIVERSIDAD NACIONAL
AVTÓNOMA DE
MEXICO

1. Follow **Anaconda**[1] installation instructions:
   https://docs.anaconda.com/anaconda/install/
2. After installation, check out the installed packages from your terminal:

```
$ conda list
```

3. (To install other packages):

```
$ conda install package_name  # installation from default channel
$ conda install -c conda-forge jupyter_contrib_nbextensions
```

4. (To launch Anaconda Navigator from terminal)

```
$ anaconda-navigator
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[1] Anaconda is a distribution of the Python and R programming languages for scientific computing, that aims to simplify package management and deployment

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https://jupyter.org/

Jupyter notebook

The Jupyter Notebook is an open-source web application that allows you to create and share documents that contain live code, equations, visualizations and narrative text.

1. Open a Jupyter notebook from your terminal

   NB: root directory in Jupyter will be that from where Jupyter is launched

```
$ jupyter notebook
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2. In Jupyter, open a "Python 3 notebook", upload basic libraries

```
import numpy as np
from matplotlib import pyplot as plt
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3. (optional) Install jupyter extensions
   https://jupyter-contrib-nbextensions.readthedocs.io/en/latest/install.html

   3.1 Install extensions

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$ conda install -c conda-forge jupyter_contrib_nbextensions
```

   3.2 Enable extensions

   - From GUI:
     A new tab "Nbextensions" will appear in Jupyter, from which extensions can be enabled.
     Enable "Table of Contents (2)".
   - From Command Line:

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$ jupyter nbextension enable toc2/main
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Jupyter lab: Jupyter's Next-Generation Notebook Interface
JupyterLab is a web-based interactive development environment for Jupyter notebooks, code, and data.

1. Open Jupyter lab from your terminal

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2. In Jupyter lab, open a "notebook", a "console", etc.

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Access "Google Colab" [2] environment:

1. Go to https://colab.research.google.com
2. Click "New notebook"
3. Start coding!

[2] "Colaboratory", a.k.a. "Google Colab" is a hosted Jupyter notebook service that requires no setup to use, and provides free access to computing resources. It allows anybody to write and execute python code through the browser.

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1. Software installation
2. Access online-hosted Jupyter notebook service
3. Jupyter crash course
4. Python crash course

Jupyter crash course

Open jupyter notebook:

⇒ CV4GS_01_python-jupyter/CV4GS_01_jupyter-tutorial.ipynb

Python crash course

Open jupyter notebook:

⇒ CV4GS_01_python-jupyter/CV4GS_01_python-tutorial.ipynb