

# Lecture 01

## Python/Jupyter Crash Course

2024-08-14

Computer Vision for Geosciences



1. Software installation

1. Anaconda installation
2. Jupyter environment

2. Access online-hosted Jupyter notebook service

3. Jupyter crash course

4. Python crash course

## 1.1. Anaconda installation

1. Follow **Anaconda**<sup>1</sup> 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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<sup>1</sup>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:

```
$ 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.

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2. In Jupyter lab, open a “notebook”, a “console”, etc.

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## Access “Google Colab”<sup>2</sup> environment:

1. Go to <https://colab.research.google.com>
2. Click “New notebook”
3. Start coding!



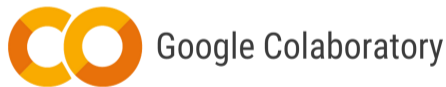
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<sup>2</sup>“Colaboratory”, a.k.a. “Google Colab” is a hosted Jupyter notebook service that requires no setup to use, and provides free access to computing resources. It allows anybody to write and execute python code through the browser.



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⇒ CV4GS\_01\_python-jupyter/[CV4GS\\_01\\_jupyter-tutorial.ipynb](#)

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