

# GRADIENT GAINS RESOURCES

## WEEK – 0

### 0.1 Intro to Python

- Here is a small 75 mins video covering all the basics of python. While some topics were covered in the class. Some important topics like Lists, Tuples , Dictionary , Functions etc are important and must be completely understood  
<https://www.youtube.com/watch?v=VchuKL44s6E>
- Here is more detailed resource with some questions to practice along the way. You only need to do the Python Tutorial Part for this section i.e. till Python VirtualEnv <https://www.w3schools.com/python/>
- Here is a small mini assignment for this section (Submission is compulsory)  
[https://docs.google.com/forms/d/1U9f\\_oSHr3I\\_WvQQ\\_3i2tACXUmgqZatPfxKYB17E6NHw](https://docs.google.com/forms/d/1U9f_oSHr3I_WvQQ_3i2tACXUmgqZatPfxKYB17E6NHw)

### 0.2 Numpy , Pandas and Matplotlib

- **Numpy Resources:**  
[https://youtu.be/QUT1VHiLmmI?si=heiM72\\_gsERYrFEz](https://youtu.be/QUT1VHiLmmI?si=heiM72_gsERYrFEz)  
<https://www.w3schools.com/python/numpy/default.asp> (detailed resource with some questions to practice)  
<https://jalammar.github.io/visual-numpy/> (excellent for visualizing dimensions)
- **Pandas**  
<https://youtu.be/2uvysYbKdjM?si=ooykp8PVn8Qztsu5>  
<https://www.w3schools.com/python/pandas/default.asp>

- **Matplotlib**  
[https://youtube.com/playlist?list=PL-osiE80TeTvipOqomVEeZ1HRrcEvtZB\\_&si=-nfWE6OdyXOOKbcg\\_\(first two parts\)](https://youtube.com/playlist?list=PL-osiE80TeTvipOqomVEeZ1HRrcEvtZB_&si=-nfWE6OdyXOOKbcg_(first%20two%20parts))  
[https://www.w3schools.com/python/matplotlib\\_intro.asp](https://www.w3schools.com/python/matplotlib_intro.asp)
- Here's the compulsory mini assignment for this part  
[https://docs.google.com/forms/d/e/1FAIpQLSeIEpMLPE\\_dXLu9i4UTYdl7fjc2U5dpuy mujS-CzJFIYLV5A/viewform?usp=header](https://docs.google.com/forms/d/e/1FAIpQLSeIEpMLPE_dXLu9i4UTYdl7fjc2U5dpuy mujS-CzJFIYLV5A/viewform?usp=header)

### 0.3 Intro to Machine Learning (Linear Regression)

- This week we take an introductory dive into the realm of ML and specifically learn about Simple linear regression

 **Week 0 Intro to ML/LR**

In the above folder you should find 2 videos and 2 decks.

1. Begin with  **1 Introduction to ML.mp4**
2. and then go through  
 **2.1 Intro to Linear Regression and Gradient Descent.pdf**

You can also see the video for this pdf instead:

 **2.2 Intro to Linear Regression Video.mp4**

Both cover the same content though the pdf is more detailed.

3. This covers an example of applying whatever you learnt above using actual data and simple maths, basically your first “manual implementation” of Linear regression and GD:)

 **3 Example of Linear Regression using Gradient Descent.pdf**

- Next up is a mini Assignment 0.3 covering the topics of ML/LR and its submission is compulsory!

<https://forms.gle/vyqwR7ZZuFPZsDAn9>

