Good Evening,

Thank You for attending today's session, means a lot to us. We hope you got an intro to Python and how to get started with ML/DL.

Things covered today are basic and this is where you need to learn on yourself as well. We will always help you from our side and we wish you get amazing opportunities by doing amazing projects. Go get that AI Intern role at Switzerland 🔥

**> Artificial Intelligence**

AI is heuristic-based.  You'll have to hard code (write logic to make something work)

To learn more on AI ~ <http://aima.cs.berkeley.edu/> (Best course and book), also Stanford's CS 221 is amazing - <http://web.stanford.edu/class/cs221/>.

We know, we won't be able to cover all the things, not even half, but we wish to give you a starting point. If required, we will host amazing FREE ML/DL workshops again. Tomorrow, after DL is covered, we'll post amazing projects list, you'll be able to learn and do yourself.

Things required for ML/DL:

> **Python (Basics covered today)**

Learn more: from the resources, I provided in AECSU - <http://bit.ly/2lC12qA>

Python has many libraries that are very essential for ML/DL:

**- numpy (**<https://numpy.org/>**)**

**- pandas (**<https://pandas.pydata.org/pandas-docs/stable/>**)**

**- matplotlib (**<https://matplotlib.org/>**)**

**- scipy (**<https://www.scipy.org/>**)**

**- scikit-learn (**<https://scikit-learn.org/stable/>**)**

**- keras (**<https://keras.io/>**)**

**- tensorflow (**<https://www.tensorflow.org/>**)**

Do this course, I recommend: <https://www.edx.org/course/using-python-for-research-2>

Amazing course, you'll find it easy to follow along and you'll get to learn a lot as well. get a certificate from Harvard University ( You can avail a 90% discount - [https://courses.edx.org/financial-assistance/#](https://courses.edx.org/financial-assistance/) )

You'll get amazing videos on YouTube to learn about these packages and their functions. You'll be good at Python after doing these.

**> Machine Learning**

ML can be divided into 3 categories:

1) Supervised Learning

2) Unsupervised Learning

3) Reinforcement Learning

and various ML Algorithms are:

-> **Classification**

Classification algorithms are used when you have a dataset of observations where we'd like to use the features associated with an observation to predict its class.  
Example: Predict the type of flower when provided information on sepal length, sepal width, color, petal width, and petal length.

+ Naive Bayes

+ Logistic Regression  
+ Decision Trees  
+ K-Nearest Neighbors  
+ Support Vector Machines  
+ Random Forests  
+ Boosted Trees

-> **Regression**

Regression algorithms are used when you have a dataset of observations where you'd like to use the features to predict a continuous output.  
Example: Predict the price of a house using the following features: sq ft, number of rooms, zip code, age of house, school district.

+ **Linear Regression** (<https://medium.com/coinmonks/linear-regression-bf5141ce9ac8>)

+ Polynomial Regression  
+ Decision Trees  
+ K-Nearest Neighbors  
+ Random Forests  
+ Boosted Trees  
+ Gaussian Process Regression

-> **Clustering**

Clustering is a popular technique to find groups or segments in your data that are similar. This is an unsupervised learning algorithm in the sense that you don't train the algorithm and give it examples for what you'd like it to do, you just let the clustering algorithm explore the data and provide you with new insights.

+ K-means clustering  
+ Soft clustering with Gaussian mixture models

( Learn from here - <https://www.jeremyjordan.me/data-science/> ) & Take up this course <http://bit.ly/2m0zgnG> . Coursera's Machine Learning Course from Stanford University ( <https://www.coursera.org/learn/machine-learning> ) by Andrew NG is like the welcome course for Everyone around the World. Everyone does it and everyone knows about the course. Earn this certificate from Stanford University (Apply for Financial Aid - it will be free). You have to learn all the remaining ML algorithms by yourself, take courses, read blogs and watch videos. You are just one Google Search away to learn the rest of ML Algorithms.

**PROBLEMS FACED TODAY**

**Unable to load the HousePrice.csv file from (**<https://medium.com/coinmonks/linear-regression-bf5141ce9ac8>**)**

**Why did it happen and how to solve?**

**When you reference a file in Python  "**df=pandas.read\_csv('./DataSet/HousePrice.csv')**" , "./"**represents the current directory in Python and from the current directory, it was searching for a folder called DataSet and then the HousePrice.csv file in the same folder. Since we all downloaded the file from github directly and saved in our Desktop, we don't need to search it this way. We need to make our current directory in Python to Desktop and reference it directly.

To check your current working directory in Python, type:

**>>> pwd**

 It will give a location and that is your current working directory. You can either make a folder by the name "DataSet" in the location given by pwd and paste the HousePrice.csv file inside the folder and continue with the program or you can change your current working directory.

To change the current working directory to the location where you downloaded your file, Desktop for us, type:

**>>> cd C:\Users\skk\Desktop**

and now check the location by **>>> pwd,**it will show your Desktop, where you downloaded your file.

To check, if you have the file in your pwd, type:

**>>> ls**

and you'll see "HousePrice.csv" listed there.

Then finally, your code will change as **"**df=pandas.read\_csv('./HousePrice.csv')

and it will work.

Thanking You,

Explore ML Team

Assam Engineering College