Syllabus for AI workshop

Installation

1. Anaconda
2. Jupyter Notebook

3. Python
    a. Data types
    b. List
    c. Tuples
    d. Dictionary
    e. Mutable/Immutable
    f. Loops
    g. Functions

3. Numpy
    a. Array 1d
    b. Array 2do
    c. Indexing
    d. Matrix multiplication
    e. Shape, Reshape
    f. Random

4. Pandas
    a. Csv reading
    b. Data Frame
    c. Loc/iloc
    d. Drop
    e. Fillna
    f. Describe
    g. Info
    h. Mean, median, sum
    i. Mapping
    j. Plot
    k. Visualization

5. Titanic data set preprocessing
    a. Collecting dataset
    b. Visualization of titanic data
    c. Null value looking after
    d. Filling null value
    e. Dropping unnecessary columns
    f. Concept of Outliers
    g. Heat map generate

6. Matplotlib
    a. Plot
    b. Scatter plot
    c. 3d plot

7. Pickle
    a. Load
    b. Dump

8. Scikit-learn
    a. Linear Regression
    b. Decision Trees
    c. Random Forest

9. Breast cancer detection using the numpy data from University of California

10. Artificial Neural network for Dog and cat classification

Assuming the audience in this group are “good” enough to grasp “concepts”, be prepared for an adventure and risks...

Linear Regression

It will be able to cover various concepts like:

- Bias
- Stochastic Gradient Descent
- Slope

Titanic problem using ANN

- Gradient
- SGD
- Local minima
- Learning Rate

CNN

- Convolution
- Filters/Kernels
- Pooling
- Fully Connected Networks / Dense Networks