OMNES CYPRIAN

BSc. CS

A READING REAPORT OF MACHINE LEARNING(chapter I)

A. Why machine learning

It became machine learning so as to solve programming problems efficiently that used to be solved without using machine approaches.

Machine learning can solve the following

(i)Supervised learning: Inputs/outputs pairs learning, examples

- Zip code determination by handwritten digits on an envelope
- Determination of whether a tumor is benign based on a medical image
- Detection of fraudulent activity in credit card transactions

(ii)Unsupervised algorithms: Data input is known but no occurrence of output, examples

- Topics recognition in a set of blog posts
- Segmentation of customers into groups with similar preferences
- Detection of abnormal access patterns to a website

B. Why python

- A lot of related libraries
- Ease of use
- General-purpose and powerful language
- Direct interaction with the code using terminal or Jupiter notebooks
- Provides quick iteration and easy interaction between data and analysis processes
- GUI and web services

Scikit-learn: the most used and open source tool for machine learning algorithms libraries

C. Essential libraries and tools

-**numpy:** packages for scientific computing

-**jupyter notebook**: interaction environment for running code in the browser

-**scipy:** collection of functions for scientific computing in python

-**matplotlib:** the primary scientific plotting library in python with functions like (charts visualization, histograms, scatter plots).

-**pandas: python** library for data wrangling and analysis