WEEK ONE: FIELD REPORT

Tasks Conducted:

Task one:

Reading the book (Introduction to machine learning)

Chapter one

From this chapter I learnt the following:

I/ The meaning of machine learning:

Machine learning is the field that made by the subset of artificial intelligence computer science and statistics for the purpose of extracting knowledge from data collected from various sources.

II/ Why machine learning:

In reference from this book the role of machine learning is to develop algorithms that can manipulate various types of data like pictures and other types of complex data more efficient and effectively compared to hand coded rules.

III/ Problems machine learning can solve:

The problem which can be solved by machine learning are divided into three categories namely:

III.A: Supervised learning:

In this type of learning the machine learning model is feed with input and output dataset, so the machine can learn and predict the outcome (the knowledge found from the data)

Example: Identifying the zip code from hand written digit from the envelope

III.B: Unsupervised learning:

In this type of learning only input dataset is given (feed) to the algorithm, and so the learning algorithm predict the output based on the information given as a data set.

Example: Identifying topics in a set of blog posts.

III.C: And Reinforcement Learning which is not discussed in this book.

IV/ Knowing your task knowing your data:

Under this title the writer tried to explain that before starting machine learning project there are number of things you have to keep into consideration in order to develop meaningful machine language project, so you have to ask yourself the following questions:

1) what questions I'm I trying to answer? do I think the data collected can answer the question?

2) what is the best way to phrase my question(s) as machine language problem?

3) Have I collected enough data to represent the problem I want to solve?

4) what features of data did I collected extract, and will this enable the right predictions?

5) How will I measure success in my applications?

6) How will the machine learning solution interact with other parts of my research or business product?

v/ WHY PYTHON?

In this section We learnt that the python programming language is the most preferred language In this field of study due to the following reasons:

- It has a set of libraries for data loading, visualization, statistics, natural language processing, image processing and more.
- It also allows creation of complex graphical user interface and web services and for integration to the existing system.