

## **Documentation on XAI**

I will divide this into 3 sections:

- 1) What is XAI and why do we use it?
- 2) Stats and requirement of XAI
- 3) How to use XAI

XAI stands for "Explainable Artificial Intelligence."

The major question arises is XAI is important to make decisions and prediction?

My answer is "YES". In today's world, we need the work done within less time with more accurate results. So the best solution is to build an ML model!"

So we should use the model. Here are two ways to build a model

- i) Write the code from scratch or
- ii) Modify the existing code

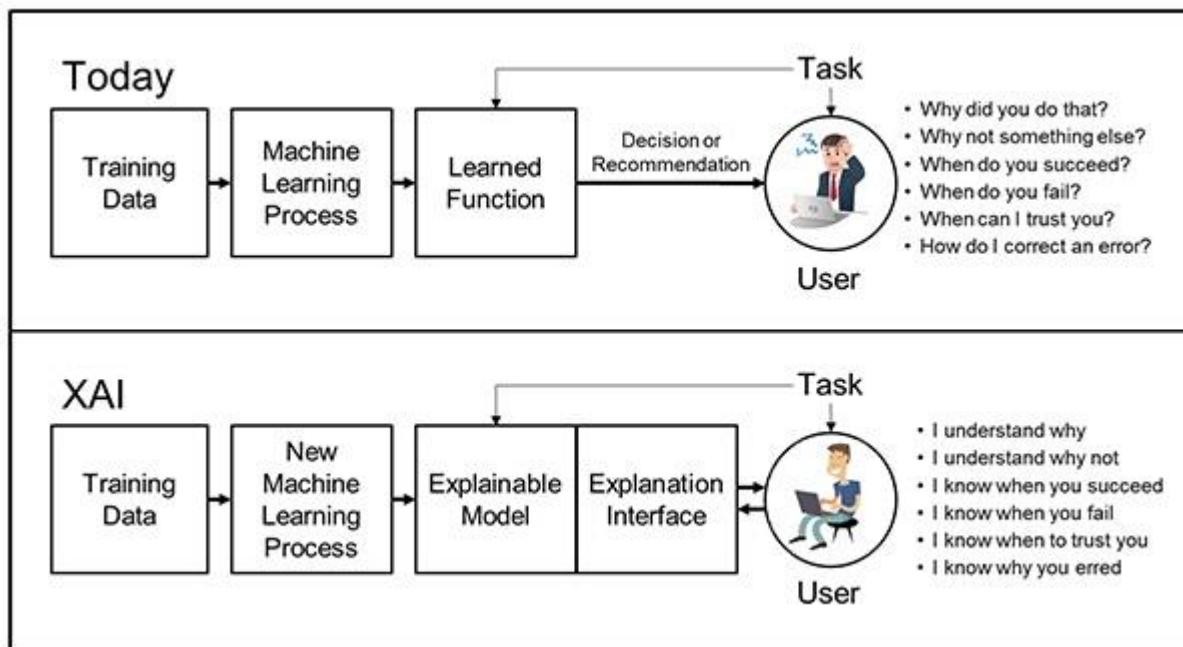
In the first case, we should effort a lot of time and can't be done effectively. We should train the model a lot.

So we move to the second step. To modify one's code we must have a clear understanding of the subject in depth. It is not possible with everyone so we will go with the module "XAI" where it makes predictions which is human Understandable

In the year 2019 tech companies like Google, You-tube and Facebook used MI models and results in false predictions and defective recommendation systems. To modify and get things easier XAI is used to understand the imbalance in the data that we have and majorly focus on

Training Data -> Machine Learning Model -> Explanation model ->UI (Human Readable)

## Then Vs Now



The two important phases are:

### 1) Data Analysis

- i) View class imbalances for protected columns
- ii) View imbalance of one column
- iii) Create a balanced test-train split

### 2) Model Evaluation

- i) Data Cleansing
- ii) Accuracy
- iii) Data analysis and charts

Usage:

**1) pip install xai**

**2) import xai.data**

```
df = xai.data.load_census()  
df.head()
```

According to research, more than 37.85% of ML models use XAI, and the prediction very much accurate.

The major advantage is that all the predictions and analysis are humanly understandable

So XAI plays a major role in Predictions and building Models.

References:

1)<https://ethicalml.github.io/xai/index.html>

2)<https://towardsdatascience.com/explainable-ai-part-i-explanations-and-opportunities-5c2734c23d6e>