



MACHINE LEARNING 6

Assignment 1

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Table of Contents

1.Introduction

2.Problem Statement

3.Output

1.Introduction

This assignment will help you to consolidate the concepts learnt in the session.

2.Problem Statement

In this assignment students need to predict whether a person makes over 50K per year or not from classic adult dataset using XGBoost. The description of the dataset is as follows:

Data Set Information:

Extraction was done by Barry Becker from the 1994 Census database. A set of reasonably clean records was extracted using the following conditions: ((AAGE>16) && (AGI>100) && (AFNLWGT>1)&& (HRSWK>0))

Attribute Information:

Listing of attributes: >50K, <=50K.

age: continuous.

workclass: Private, Self-emp-not-inc, Self-emp-inc, Federal-gov, Local-gov, State-gov, Without-pay, Never-worked.

fnlwgt: continuous.

education: Bachelors, Some-college, 11th, HS-grad, Prof-school, Assoc-acdm, Assoc-voc, 9th, 7th-8th, 12th, Masters, 1st-4th, 10th, Doctorate, 5th-6th, Preschool.

education-num: continuous.

marital-status: Married-civ-spouse, Divorced, Never-married, Separated, Widowed, Married-spouse-absent, Married-AF-spouse.

occupation: Tech-support, Craft-repair, Other-service, Sales, Exec-managerial, Prof-specialty, Handlers-cleaners, Machine-op-inspct, Adm-clerical, Farming-fishing, Transport-moving, Priv-house-serv, Protective-serv, Armed-Forces.

relationship: Wife, Own-child, Husband, Not-in-family, Other-relative, Unmarried.

race: White, Asian-Pac-Islander, Amer-Indian-Eskimo, Other, Black.

sex: Female, Male.

capital-gain: continuous.

capital-loss: continuous.

hours-per-week: continuous.

native-country: United-States, Cambodia, England, Puerto-Rico, Canada, Germany, Outlying-US(Guam-USVI-etc), India, Japan, Greece, South, China, Cuba, Iran, Honduras, Philippines, Italy, Poland, Jamaica, Vietnam, Mexico, Portugal, Ireland, France, Dominican-Republic, Laos, Ecuador, Taiwan, Haiti, Columbia, Hungary, Guatemala, Nicaragua, Scotland, Thailand, Yugoslavia, El-Salvador, Trinidad&Tobago, Peru, Hong, Holand-Netherlands.

Following is the code to load required libraries and data:

```
import numpy as np
```

```
import pandas as pd
```

```
train_set = pd.read_csv('http://archive.ics.uci.edu/ml/machine-learning-databases/adult/adult.dat a', header = None)
```

```
test_set = pd.read_csv(http://archive.ics.uci.edu/ml/machine-learning-databases/adult/adult.test , skiprows = 1, header = None)
```

```
col_labels = ['age', 'workclass', 'fnlwgt', 'education', 'education_num',  
'marital_status', 'occupation','relationship', 'race', 'sex', 'capital_gain',  
'capital_loss', 'hours_per_week', 'native_country', 'wage_class']
```

```
train_set.columns = col_labels
```

```
test_set.columns = col_labels
```

NOTE:ThesolutionsharedthroughGithubshouldcontainthesource codeusedand thescreenshotoftheoutput.

3.Output

This assignment consists of 200 marks and has to be submitted in .ipynb/PDF format in the upcoming session for evaluation.