Automated Recruitment Model

Overview

We created an automated recruitment model which can predict whether any candidate, given his/her survey information and resume will be hired(1) or not(0).

Models:

1. Neural Network

1) Nueral Network Model

- Firstly, we cleanup the survey data and handle the missing values.
  - ❖ We install various libraries and packages
  - ❖ We check for encoding, if present.
  - ❖ The data is checked for any outliers which are handled separately; the missing values are filled and data is cleaned for any special characters.
- Then, we extract text from CVs, which are present in docx format.The Candidate Id and extracted data are paired together. We then clean the data for any extra spaces, special characters, whitespaces, images etc.
- Both the survey and CV Data is then merged together to finally get the Train Dataset
- Similarly, we process the test dataset.

- Now, for neural network
    - ❖ Firstly we convert the text data into embeddings, combine it with numerical features, following padding to ensure a fixed length.
    - ❖ Then the data is converted to tensors.
    - ❖ The train data is split into test and train data, with test size as 0.15.
    - ❖ The Neural Network is a custom model having 2842 features in input layer and 2 features in output layer with different activation functions in between.
    - ❖ We used Adam optimiser and cross validation for the loss function. The learning rate is 1e-5.
    - ❖ It then computes the recall, precision and f1 score.
    - ❖ We do similar processing on test data and get our predictions.

2) Code Files:

cv_extraction.ipynb

Nueral_net.ipynb

Excel_data_cleanup.ipynb