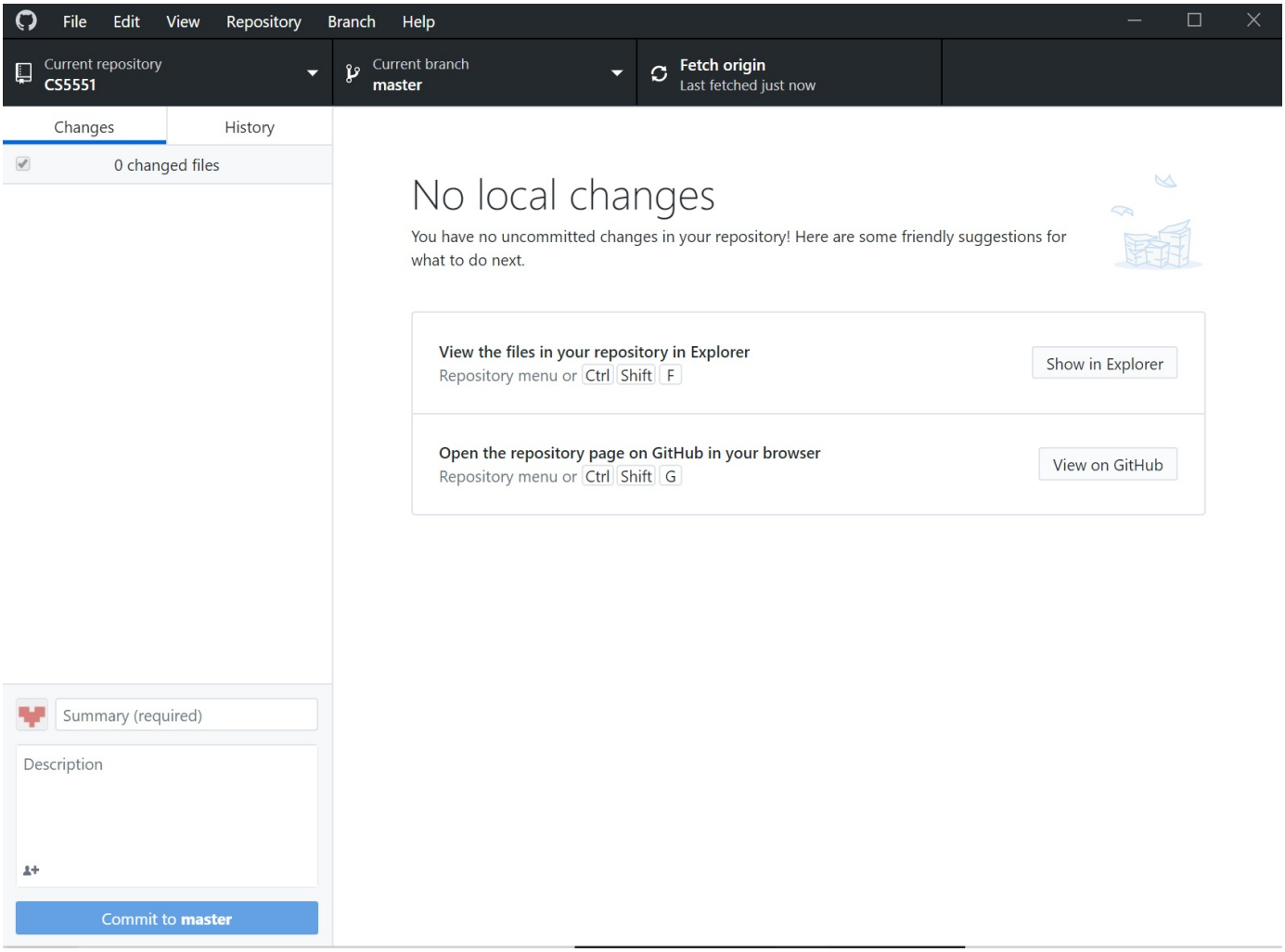
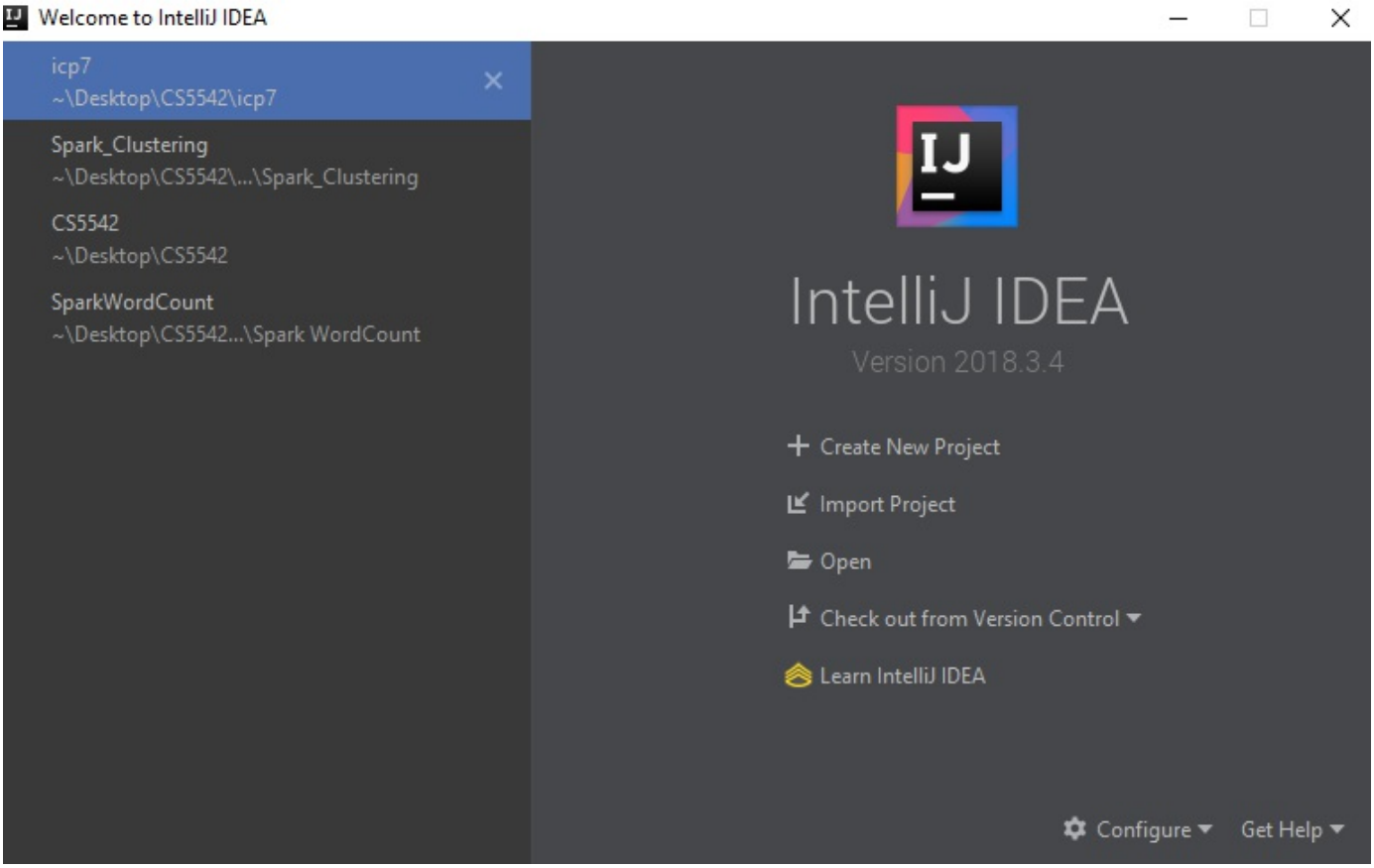
CS5542-ICP1

In ICP1 the tasks are to install relevant software necessary for the class in the semester. This software includes:

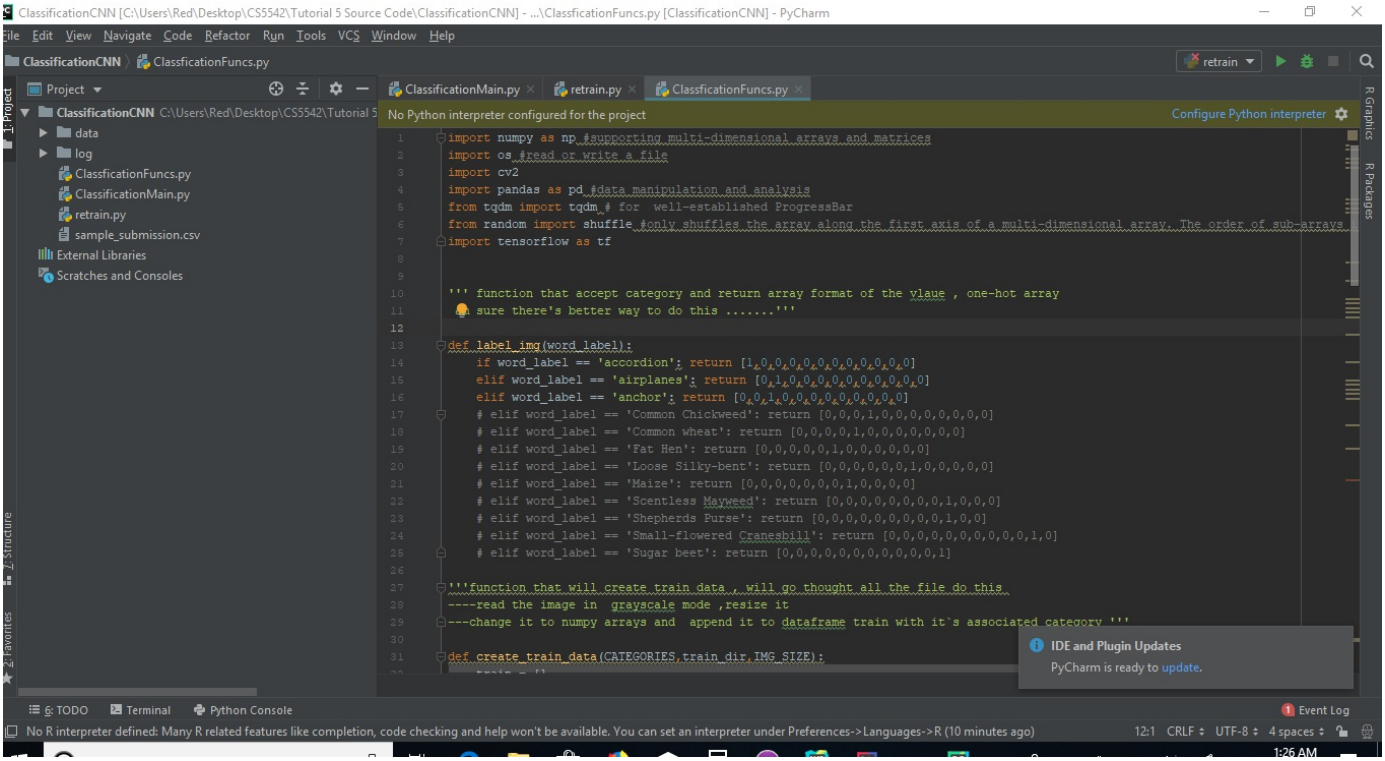
1- GitHub Desktop



2- IntelliJ

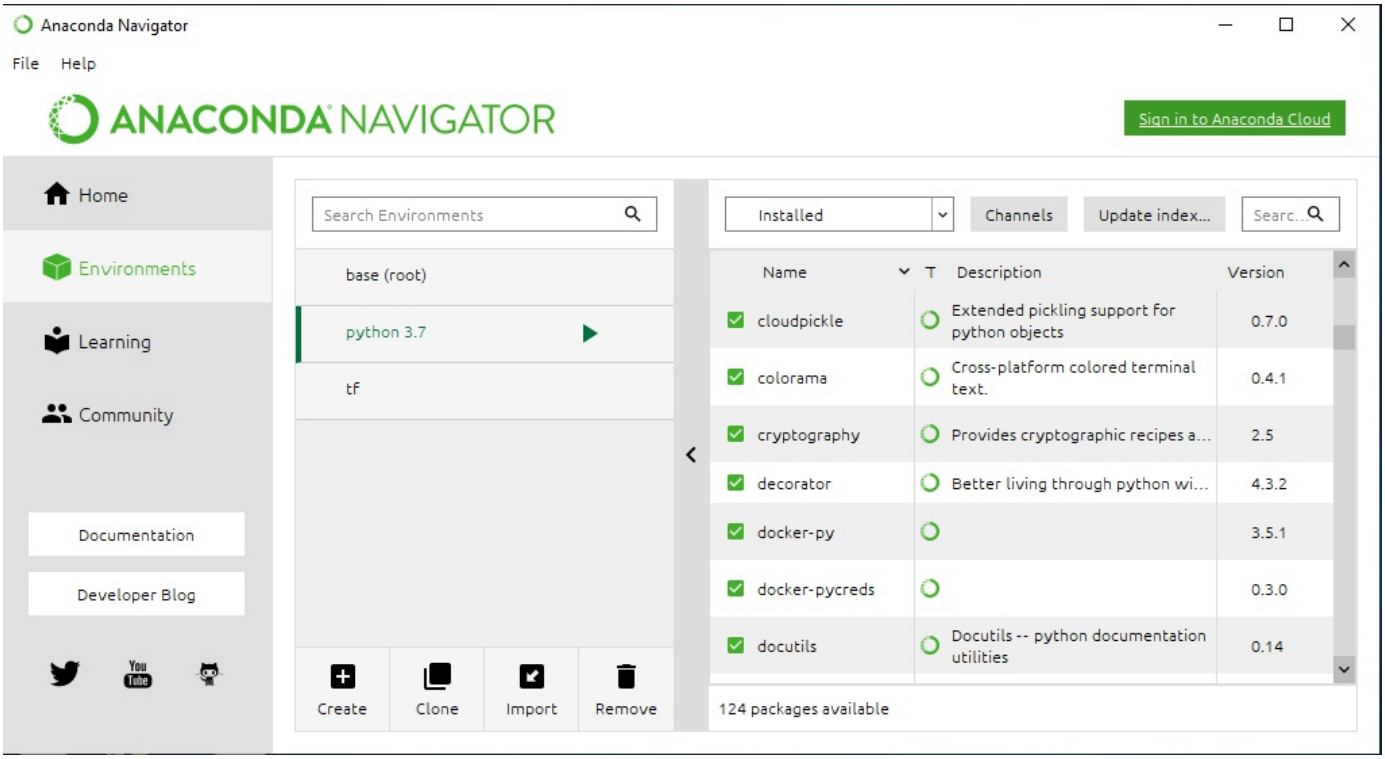

Welcome to IntelliJ IDEA
icp7
~\Desktop\CS5542\icp7
Spark_Clustering
~\Desktop\CS5542\...\Spark_Clustering
CS5542
~\Desktop\CS5542
SparkWordCount
~\Desktop\CS5542...\Spark WordCount
IntelliJ IDEA
Version 2018.3.4
Create New Project
Import Project
Open
Check out from Version Control
Learn IntelliJ IDEA
Configure
Get Help

3- PyCharm

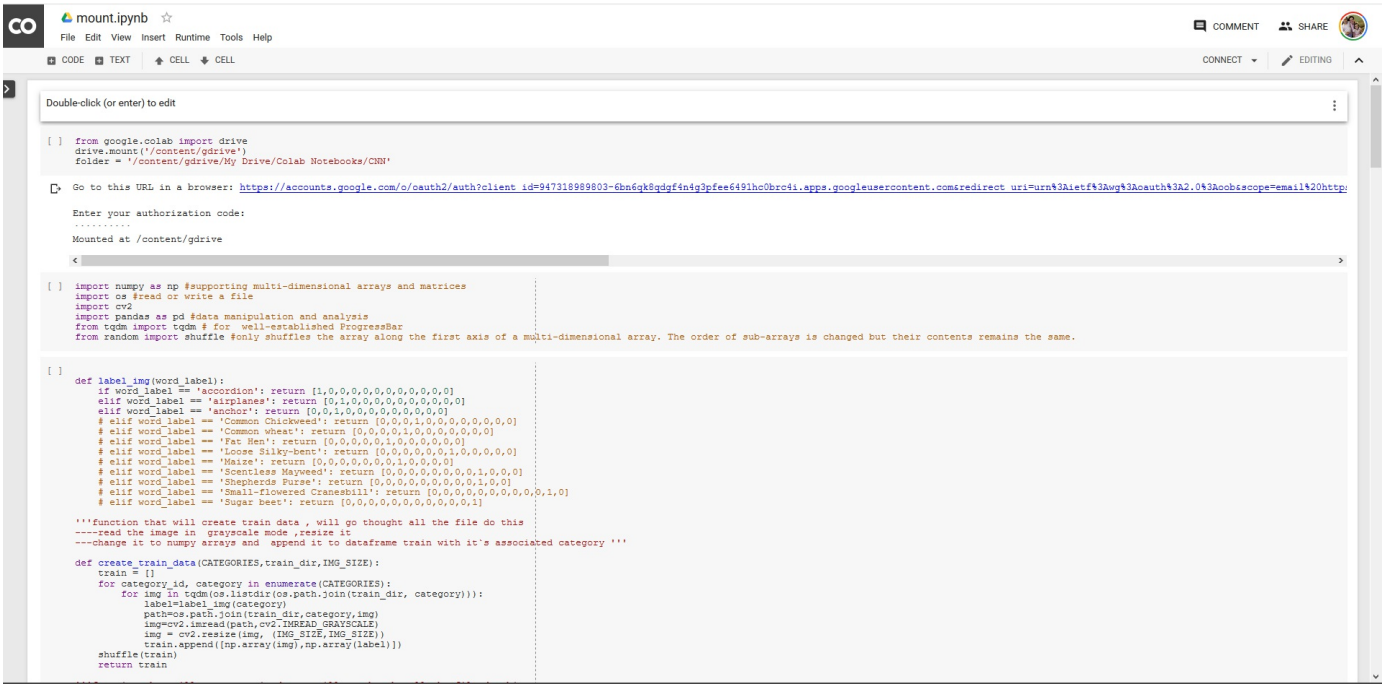

ClassificationCNN [C:\Users\Red\Desktop\CS5542\Tutorial 5 Source Code\ClassificationCNN] - ...\ClassficationFuncs.py [ClassificationCNN] - PyCharm
File Edit View Navigate Code Refactor Run Tools VCS Window Help
ClassificationCNN
ClassficationFuncs.py
retrain
Project
ClassificationCNN C:\Users\Red\Desktop\CS5542\Tutorial 5
data
log
ClassficationFuncs.py
ClassificationMain.py
retrain.py
sample_submission.csv
External Libraries
Scratches and Consoles
ClassificationMain.py
retrain.py
ClassficationFuncs.py
No Python interpreter configured for the project
Configure Python interpreter
import numpy as np #supporting multi-dimensional arrays and matrices
import os #read or write a file
import cv2
import pandas as pd #data manipulation and analysis
from tqdm import tqdm # for well-established ProgressBar
from random import shuffle #only shuffles the array along the first axis of a multi-dimensional array. The order of sub-arrays
import tensorflow as tf
''' function that accept category and return array format of the vlaue , one-hot array
sure there's better way to do this .....'''
def label_img(word_label):
if word_label == 'accordion': return [1,0,0,0,0,0,0,0,0,0,0,0]
elif word_label == 'airplanes': return [0,1,0,0,0,0,0,0,0,0,0,0]
elif word_label == 'anchor': return [0,0,1,0,0,0,0,0,0,0,0,0]
elif word_label == 'Common Chickweed': return [0,0,0,1,0,0,0,0,0,0,0,0]
elif word_label == 'Common wheat': return [0,0,0,0,1,0,0,0,0,0,0,0]
elif word_label == 'Fat Hen': return [0,0,0,0,0,1,0,0,0,0,0,0]
elif word_label == 'Loose Silky-bent': return [0,0,0,0,0,0,1,0,0,0,0,0]
elif word_label == 'Maize': return [0,0,0,0,0,0,0,1,0,0,0,0]
elif word_label == 'Scentless Mayweed': return [0,0,0,0,0,0,0,0,1,0,0,0]
elif word_label == 'Shepherds Purse': return [0,0,0,0,0,0,0,0,0,1,0,0]
elif word_label == 'Small-flowered Cranesbill': return [0,0,0,0,0,0,0,0,0,0,1,0]
elif word_label == 'Sugar beet': return [0,0,0,0,0,0,0,0,0,0,0,1]
'''function that will create train data , will go thought all the file do this
----read the image in grayscale mode ,resize it
---change it to numpy arrays and append it to dataframe train with it's associated category '''
def create_train_data(CATEGORIES,train_dir,IMG_SIZE):
IDE and Plugin Updates
PyCharm is ready to update.
6: TODO
Terminal
Python Console
Event Log
No R interpreter defined: Many R related features like completion, code checking and help won't be available. You can set an interpreter under Preferences->Languages->R (10 minutes ago)
12:1 CRLF UTF-8 4 spaces
1:26 AM

4- Python 3.6

5- Tensorflow



I'll be using Google Colaboratory for python & Tensorflow



mount.ipynb

File Edit View Insert Runtime Tools Help

COMMENT SHARE

CODE TEXT CELL CELL

CONNECT EDITING

Double-click (or enter) to edit

```
[ ]  from google.colab import drive
     drive.mount('/content/gdrive')
     folder = '/content/gdrive/My Drive/Colab Notebooks/CNN'
```

```
Go to this URL in a browser: https://accounts.google.com/o/oauth2/auth?client_id=947318989803-6bn6qk8qdgf4n4g3pfee6491hc0brc4i.apps.googleusercontent.com&redirect_uri=urn%3Aietf%3Awg%3Aoauth%3A2.0%3Aoob&scope=email%20https

Enter your authorization code:
··········
Mounted at /content/gdrive
```

```
[ ]  import numpy as np #supporting multi-dimensional arrays and matrices
     import os #read or write a file
     import cv2
     import pandas as pd #data manipulation and analysis
     from tqdm import tqdm # for  well-established ProgressBar
     from random import shuffle #only shuffles the array along the first axis of a multi-dimensional array. The order of sub-arrays is changed but their contents remains the same.
```

```
[ ]
     def label_img(word_label):
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         elif word_label == 'airplanes': return [0,1,0,0,0,0,0,0,0,0,0]
         elif word_label == 'anchor': return [0,0,1,0,0,0,0,0,0,0,0]
         # elif word_label == 'Common Chickweed': return [0,0,0,1,0,0,0,0,0,0,0]
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     '''function that will create train data , will go thought all the file do this
     ----read the image in  grayscale mode ,resize it
     ---change it to numpy arrays and  append it to dataframe train with it's associated category '''

     def create_train_data(CATEGORIES,train_dir,IMG_SIZE):
         train = []
         for category_id, category in enumerate(CATEGORIES):
             for img in tqdm(os.listdir(os.path.join(train_dir, category))):
                 label=label_img(category)
                 path=os.path.join(train_dir,category,img)
                 img=cv2.imread(path,cv2.IMREAD_GRAYSCALE)
                 img = cv2.resize(img, (IMG_SIZE,IMG_SIZE))
                 train.append([np.array(img),np.array(label)])
         shuffle(train)
         return train
```