Viz of supervised, Dimension Reduction

May 12, 2020

[1]:
```
import pandas as pd
import matplotlib.pyplot as plt
from sklearn.manifold import TSNE
```

encode emotion to number first

[2]:
```
baseline=pd.read_csv('baseline_clean_df.csv')
log=pd.read_csv('logistic_regression_trained_on_outside.csv')
```

[26]:
```
def get_first(x):
    return x.split("'")[1]
```

[27]:
```
def encoder(x):
    if x.lower()=='joy':
        return 0
    elif x.lower()=='sad':
        return 1
    elif x.lower()=='surprise':
        return 2
    elif x.lower()=='fear':
        return 3
    elif x.lower=='disgust':
        return 4
    else:
        return 5
```

[28]:
```
baseline['emotion']=baseline['Emotion'].apply(get_first)
```

[29]:
```
baseline['emotion_cluster']=baseline['emotion'].apply(encoder)
log['emotion_cluster']=log['predict'].apply(encoder)
```

dimension reduction

[30]:
```
numls=['scene_avg_p', 'scene_avg_a', 'scene_avg_d',
       'scene_avg_blur', 'scene_avg_optical_flow']
```

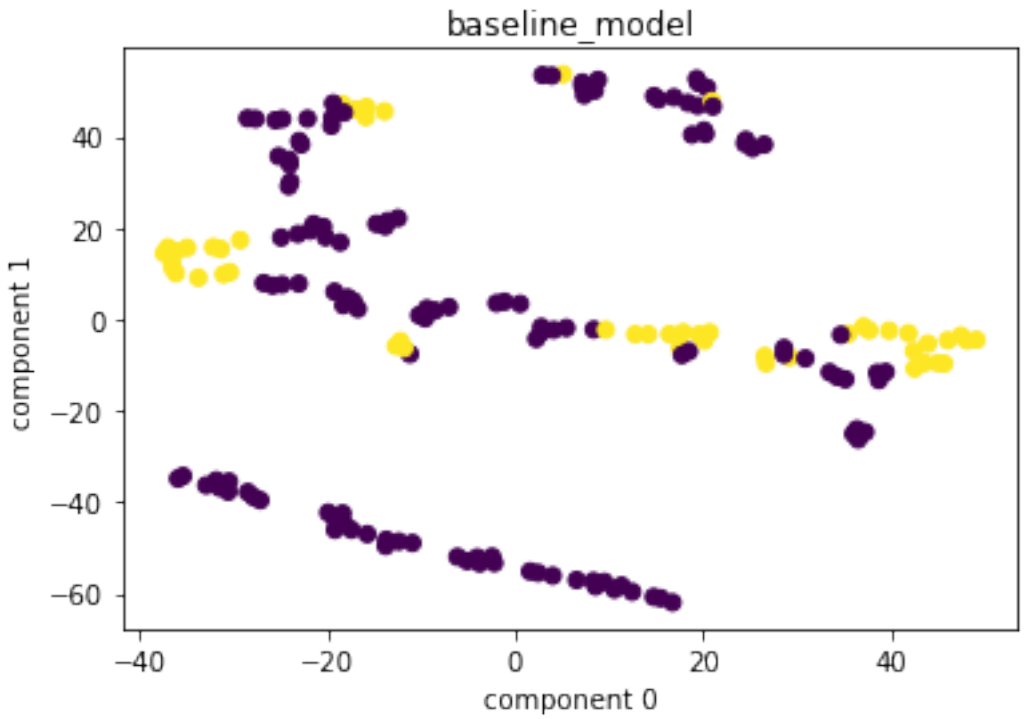
[52]:
```
tsne=TSNE(n_components=2, random_state=0, perplexity=5)
```

[53]:
```
redubase=pd.DataFrame(tsne.fit_transform(baseline[numls].fillna(0)))
```

[54]:
```
redubase['cluster']=baseline['emotion_cluster']
```

[55]:
```
plt.scatter(redubase[0], redubase[1], c=redubase['cluster'])
plt.title('baseline_model')
plt.xlabel('component 0')
plt.ylabel('component 1')
```

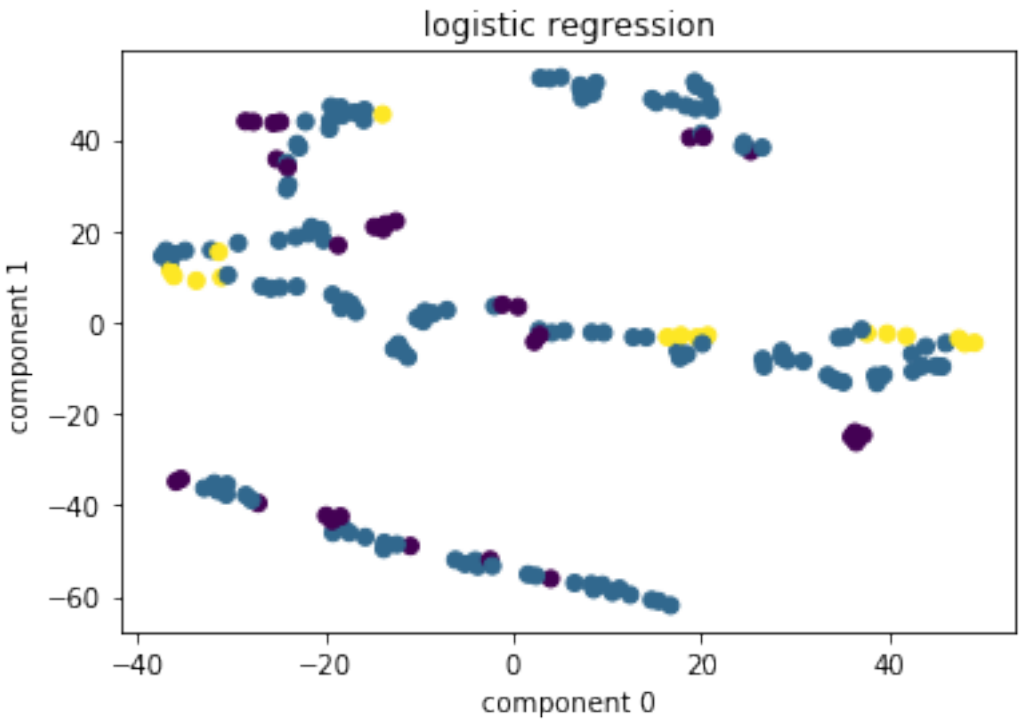
[55]:
```
Text(0, 0.5, 'component 1')
```



[56]:
```
redulog=pd.DataFrame(tsne.fit_transform(log[numls].fillna(0)))
redulog['cluster']=log['emotion_cluster']
```

[57]:
```
plt.scatter(redulog[0], redulog[1], c=redulog['cluster'])
plt.title('logistic regression')
plt.xlabel('component 0')
plt.ylabel('component 1')
```

[57]:
```
Text(0, 0.5, 'component 1')
```


logistic regression
component 1
component 0
40
20
0
−20
−40
−60
−40
−20
0
20
40

[ ]: