Experiment 6 - Local Outlier Factors

April 28, 2023

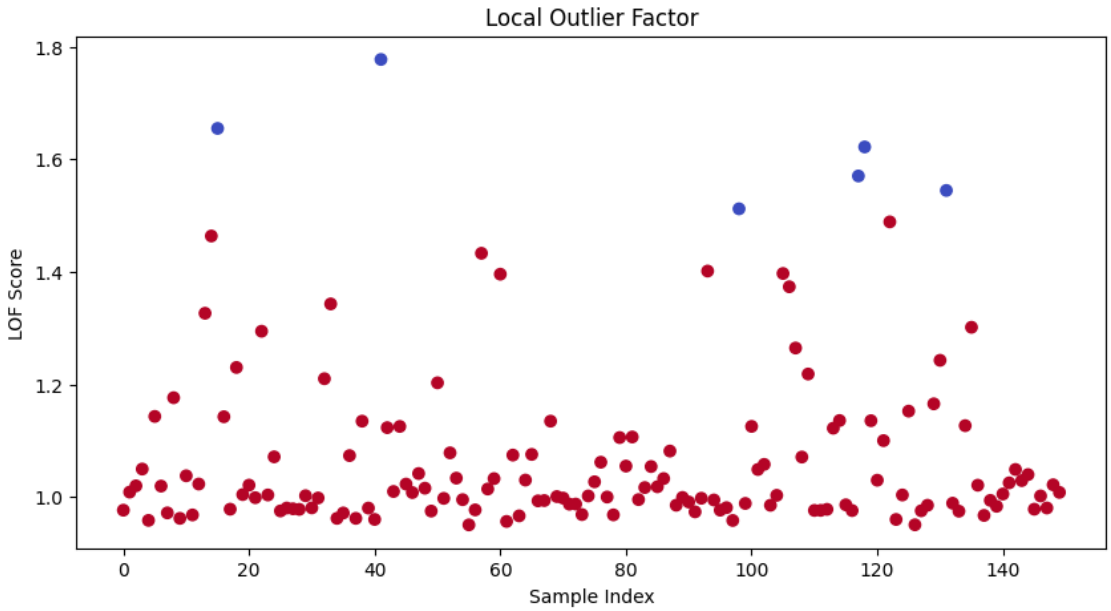
1 Experiment Details

1.1 Submitted By

Desh Iyer, 500081889, Year III, AI/ML(H), B5

[ ]:
```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
from sklearn.neighbors import LocalOutlierFactor

# Load the dataset
iris = pd.read_csv('https://archive.ics.uci.edu/ml/machine-learning-databases/
 ↪iris/iris.data', header=None)
X = iris.iloc[:, :-1].values

# Define LOF model
model = LocalOutlierFactor(n_neighbors=20, contamination='auto')

# Fit the model and get outlier scores
y_pred = model.fit_predict(X)
lof_scores = -model.negative_outlier_factor_

# Visualize outlier scores
plt.figure(figsize=(10, 5))
plt.scatter(range(len(lof_scores)), lof_scores, c=y_pred, cmap='coolwarm')
plt.xlabel('Sample Index')
plt.ylabel('LOF Score')
plt.title('Local Outlier Factor')
plt.show()
```

```
/home/volt/.local/lib/python3.10/site-packages/scipy/__init__.py:146:
UserWarning: A NumPy version >=1.16.5 and <1.23.0 is required for this version
of SciPy (detected version 1.24.3
  warnings.warn(f"A NumPy version >={np_minversion} and <{np_maxversion}"
```


Local Outlier Factor
LOF Score
Sample Index
1.8
1.6
1.4
1.2
1.0
0
20
40
60
80
100
120
140

[ ]: