Payment Fraud Detection Predictive Models

Code Explanation

1. The author before proposing the ML algorithms, he studied previous work done to detect the fraud detection, in previous work machine learning with data mining was used to classify and compared, none has been got better accuracy for detection - KNN gives 53% of accuracy.
2. So the author decided to implement this work with Cost Sensitive methods, in this the author proposed Dynamic Random Forest, KNN with RF, Bayes Minimum Risk with Random Forest (BMR - RF/RFBMR), Meta-Learning techniques.
3. Data has been download from the Kaggle site and deploy it with help of pandas and numpy library
4. Once data has been extracted, we are going to preprocess the data with attributes function (isnull.sum() to find null values and replace it mean of other two column values)
5. After processing the data, we visualized the outcomes based on other columns with Seaborn and Matplotlib as how much non-fraud and fraud class are there in the dataset.
6. Visualization based on time stamp & Transaction done by cardholders has been shown.
7. Then we splitted the data into training & testing (75%&25%) for analysis with ML
8. After we deploy the ML algorithms for analysis and evaluating for accuracy
9. Finally we can assume the best model based on accuracy
10. Author mentioned to classify the dataset with DRF & KNN as main algorithms and he also said to use BMR & Meta Learning techniques for better accuracy,and we implemented BMR-RF & Meta Learning with Tensorflow and we got Meta-learning gives better accuracy & BMR-RF & RF gives 85% of accuracy
11. We build a model file for each module for predicting the user input in Flask Framework which has deploy with as Application.