Report

1、Introduce

League of Legends(LOL)has been the most popular PC game around the world.As we all know,the game would be competitive.The game players would operate the hero which he has chosen(there would be many different heroes to choose.)to fight for the resources then get more economics,what's more,get more economics would have the higher combat effectiveness.It is easy for them to destroy the crystal and get the victory.

So,we want to through the resources got to predict the result of the game.For example,we would think about the different resources stand for different marks.And the marks higher would win.But there I would use the Decision Tree,SVC,Ensemble of Model to predict the result.I have 5 million data to train and test.

2、Decision Tree

Decision Tree(DT) would be a good manner for this job.It can set up the condition you wanted to get a predict(true or false).For example,in this project,first blood which team get,first Baron Nash which team get.Through big data,the program would judge that the team got specific resource would win the game.The program would give the most reasonable predict for this data.

3、SVC

Support vector machine (SVM) is a kind of generalized linear classifier which classifies the data according to supervised learning. Its decision boundary is the maximum margin hyperplane to solve the learning samples.

4、Ensemble of Model

Classifier integration, in fact, is ensemble learning, through the construction and combination of multiple learners to complete the learning task. The general structure is to produce a group of "individual learners" first, and then combine them with a certain strategy. The combination strategies mainly include average method, voting method and learning method.

5、Experimental Requirements

First of all,I think I would do the pretreatment.I should import the data which would be in the excel to the python.I import some function like Pandas,Numpy to give the labels to the x and the result to the y.Then this would be the train time.Through the train,the program had set up the most effective method to predict the result of every single data.In the end,I would want to know the accuracy of the function whether would higher that 0.5.This would be my thinking about the project.

6、Experimental Results

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In [11]: from sklearn.metrics import precision_score

In [12]: precision_score(test_labels, dt_pred)
Out[12]: 0.9591343831513863

In [17]: from sklearn.metrics import f1_score
         f1_score(test_labels, svc_pred)
Out[17]: 0.9708419682876283

In [22]: error = test_labels - final_pred
         ensemble_score = np.power(np.sum(np.power(error, 2)), 1/2)/len

In [23]: ensemble_score
Out[23]: 0.7070656500585311
```

The orders are DT SVC Ensemble of Model.

7、Comparison and Discussion

In my opinion,the accuracy of ensemble of model would be the most exciting for me.Because it would use all the classifier and through voting and get more correct predict for the result.I think that the evaluate of the ensemble of model would not be fit for this project result in the low accuracy of the ensemble of model.The other classifier would be normal,they would all be almost 0.97 which tells me that these two classifiers would be a good method to work out the problems.

8、Summary

First of all,in the test of three classifiers,I would choose the SVC and DT for this project because the accuracy of these two classifiers would be near to the 1 standing that the classifier would predict well.But the accuracy of ensemble of model would be a doubt for me,because of the low accuracy.At the beginning,I think the highest accuracy would be the ensemble of model. Practice is the only way to test truth.