How can I plot an SVM object in R, and do you have an example to demonstrate the process?

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June 27, 2024

Ploting an SVM (Support Vector Machine) object in R allows for visualizing the performance of the model and understanding its decision boundaries. This can be done by using the "plot" function in the "e1071" package. An example to demonstrate this process involves creating an SVM model using the "svm" function and then using the "plot" function to plot the model's decision boundaries and support vectors. This not only helps in evaluating the model's performance but also aids in identifying any potential issues or misclassifications.

Plot SVM Object in R (With Example)

You can use the following basic syntax to plot an SVM (support vector machine) object in R:

library(e1071)

plot(svm_model, df)

In this example, df is the name of the data frame and svm_model is a support vector machine fit using the svm() function.

The following example shows how to use this syntax in practice.

Example: How to Plot SVM Object in R

Suppose we have the following data frame in R that contains information about various basketball players:

#create data frame

```
df <- data.frame(points = c(4, 5, 5, 7, 8, 12, 15, 22, 25, 29),
assists = c(3, 4, 6, 8, 5, 6, 5, 6, 8, 12),
good = factor(c(0, 0, 0, 1, 0, 1, 0, 1, 1, 1)))

#view data frame
df
```

points assists good
1 4 3 0
2 5 4 0
3 5 6 0
4 7 8 1
5 8 5 0
6 12 6 1
7 15 5 0
8 22 6 1
9 25 8 1
10 29 12 1

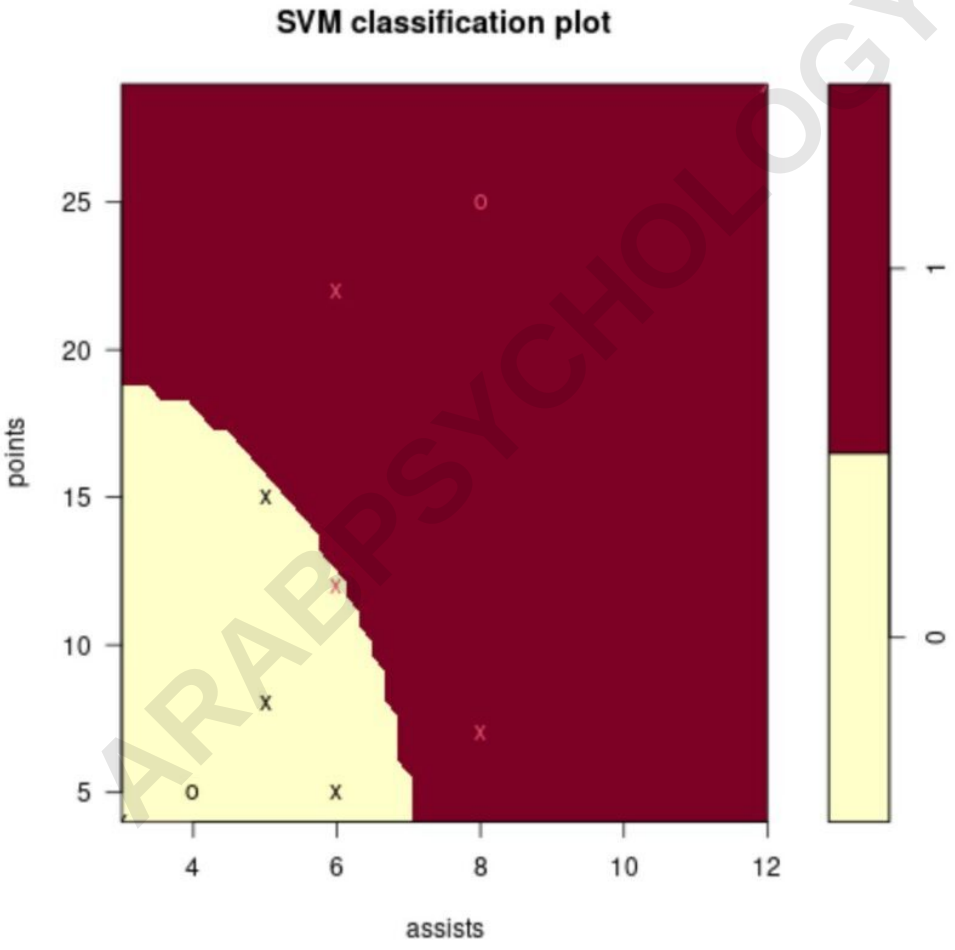
Suppose we would like to create a support vector machine that uses the variables points and assists to predict whether or not a player is good (0 = no, 1 = yes).

We can use the following code to fit the support vector

machine and then plot the results:

```
library(e1071)#fit support vector machine
model = svm(good ~ points + assists, data = df)

#plot support vector machine
plot(model, df)
```



The plot displays the values for the assists variable on the x-axis, the values for the points variable on the y-

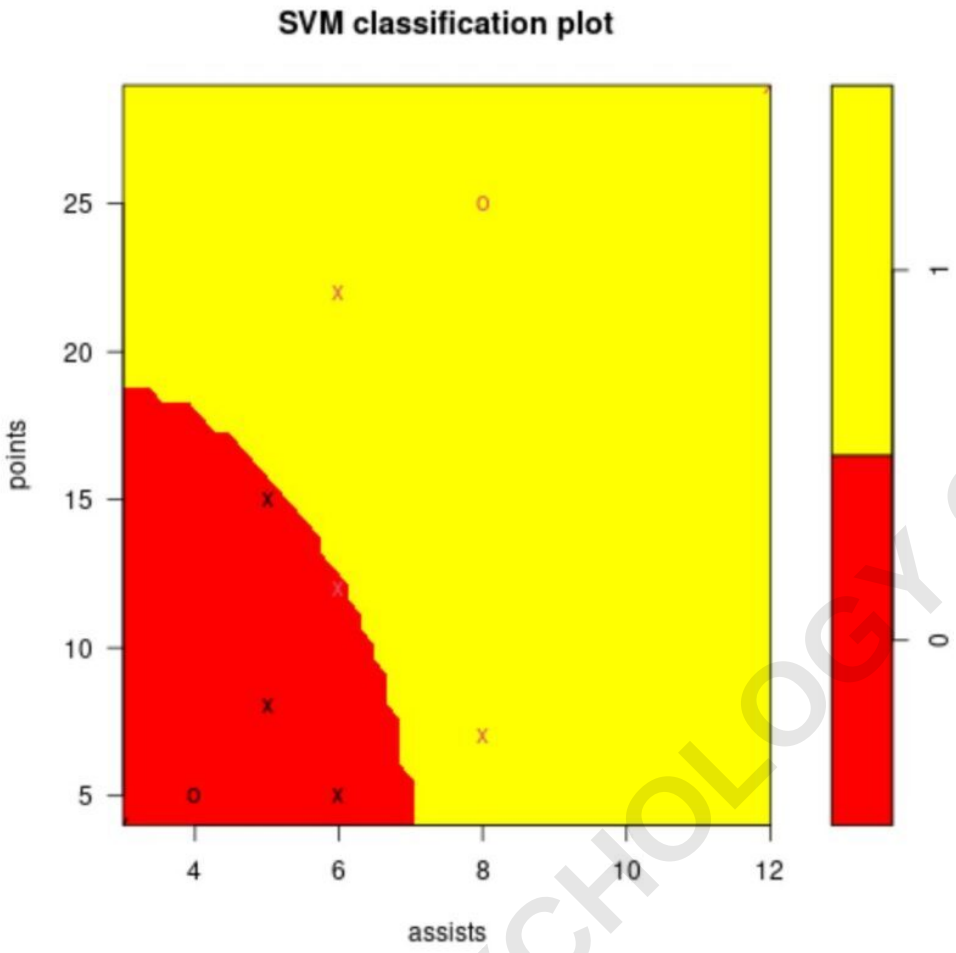
axis, and uses two different colors to display whether or not a player is predicted to be good (red) or not (yellow).

Note that you can use the color.palette argument within the plot() function to use a different color palette for the plot.

For example, we might choose to use the heat.colors color palette:

```
library(e1071)#fit support vector machine
model = svm(good ~ points + assists, data = df)

#plot support vector machine using different color palette
plot(model, df, color.palette = heat.colors)
```



Other popular choices for the color.palette argument include:

rainbowterrain.colorstopo.colors

Each color palette will produce different colors for the plot.