

Artificial Intelligence and Machine Learning Fundamentals

Activity 9: Support Vector Machine Optimization in scikit-learn

In this section, we will discuss how to use the different parameters of a support vector machine classifier. We will be using, comparing, and contrasting the different support vector regression classifier parameters you have learned about and will find a set of parameters resulting in the highest classification data on the training and testing data that we loaded and prepared in the previous activity. To ensure that you can complete this activity, you will need to have completed the first activity of this lesson.

We will try out a few combinations. You may have to choose different parameters and check the results:

1. Let's first choose the linear kernel and check the classifier's fit and score.
2. Once you are done with that, choose the polynomial kernel of degree 4, $C=2$, and $\gamma=0.05$ and check the classifier's fit and score.
3. Then, choose the polynomial kernel of degree 4, $C=2$, and $\gamma=0.25$ and check the classifier's fit and score.
4. After that, select the polynomial kernel of degree 4, $C=2$, and $\gamma=0.5$ and check the classifier's fit and score.
5. Choose the next classifier as sigmoid kernel.
6. Lastly, choose the default kernel with a gamma of 0.15 and check the classifier's fit and score.