

API:

```
class sklearn.svm.SVR(*, kernel='rbf', degree=3, gamma='scale', coef0=0.0, tol=0.001, C=1.0, epsilon=0.1, shrinking=True, cache_size=200, verbose=False, max_iter=-1)
```

kernel – specifies the kernel to use. Default case will be radial basis function kernel

C- Regularization parameter

Epsilon- Specifies the epsilon tube within which no penalty is associated in the training loss function predicted withing a distance epsilon.

SVM Regression working

In SVM for regression problem, We want to fit a model to predict a quantity for future. Therefore, we want the data point(observation) to be as close as possible to the hyperplane unlike SVM for classification. The SVM regression inherited from Simple Regression like (Ordinary Least Square) by this difference that we define an epsilon range from both sides of hyperplane to make the regression function insensitive to the error unlike SVM for classification that we define a boundary to be safe for making the future decision(prediction). Eventually, SVM in Regression has a boundary like SVM in classification but the boundary for Regression is for making the regression function insensitive respect to the error but the boundary for classification is only to be way far from hyperplane(decision boundary) to distinguish between class for future (that is why we call it safety margin).

Advantages:

- Easy to implement
- Robust to outliers
- Decision model is easily updated
- Excellent generalisation capability