

Support Vector Machine (SVM) are highly effective supervised learning algorithms mainly used for classification, regression and anomaly detection. These algorithms are highly efficient in high dimensional spaces, even with a large number of features compared to samples. They use support vectors which is a subset of training points in the decision function, making them significantly memory efficient. It is versatile and applicable to variety of kernel functions that include linear, polynomial, RBF, sigmoid.

SVC, NuSVC and Linear SVC are part of classification implementations, SVR, NuSVR and linear SVR are included in the Regression usage. But SVM can be computationally intensive overfit high dimensional data and require parameter tuning for both regularization and RBF kernels. SVM excels when working with large datasets and can handle imbalanced classes and samples by weighing.