**Support vector machines (SVMs)** are supervised learning methods used for [classification](https://scikit-learn.org/stable/modules/svm.html#svm-classification), [regression](https://scikit-learn.org/stable/modules/svm.html#svm-regression) and [outliers detection](https://scikit-learn.org/stable/modules/svm.html#svm-outlier-detection).

**Advantages** of support vector machine:

* Effective in high dimensional spaces.
* Effective in cases where number of dimensions is greater than the number of samples.
* Uses a subset of training points in the decision function (called support vectors), so it is also memory efficient.
* Versatile: different [Kernel functions](https://scikit-learn.org/stable/modules/svm.html#svm-kernels) can be specified for the decision function. Common kernels are provided, but it is also possible to specify custom kernels.

**Disadvantages** of support vector machines include:

* If number of features is much greater than the number of samples, avoid over-fitting in choosing [Kernel functions](https://scikit-learn.org/stable/modules/svm.html#svm-kernels) and regularization term is crucial.
* SVMs do not directly provide probability estimates, these are calculated using an expensive five-fold cross-validation.