## A geometrical approach to ML

- ${\bf 2}$  Send all data points in a higher dimension space where they are linearly separable  $\rightarrow$  kernel trick
- $\Rightarrow$  SVM + kernel trick = Find the optimal separating hyperplane in this higher dimension space, without ever computing the mapping.
  - SVM try to separate data by maximizing a geometrical margin
  - They are computed offline
  - They offer a sparse, robust to class imbalance, and easy to evaluate predictor
  - Kernels are a way of enriching (lifting) the data representation so that it becomes linearly separable
  - SVMs + kernels offer a versatile method for classification, regression and density estimation
  - [Link] to documentation in scikit-learn