

Support Vector Machine (SVM) is a supervised learning algorithm used to learn a **hyperplane** that can solve the **binary classification problem**

Hyperplanes

“a flat affine subspace” 😐

- **Flat:**
 - hyperplane is not curved, it increases/decreases constantly in each direction
- **Affine:**
 - the hyperplane doesn't need to pass through the origin
 - it can have an “offset” or be shifted (may have intercept)
- **Subspace:**
 - a subset of vectors in a larger vector space
 - in a d –dimensional space, a hyperplane has dimension $d - 1$
 - in 2D it is a **line**, in 3D it is a **plane**

