

- **Distance of a Hyperplane from the origin:**

- Let's assume a hyperplane $\vec{w}^T \vec{x} + w_0 = 0$
- Its distance from the origin is given as: $d = \frac{w_0}{\|\vec{w}\|}$

- **Distance of a point \vec{x}_0 from a hyperplane** is given as: $d = \frac{|w^T x_0 + w_0|}{\|w\|}$

- i.e. Just put the point in the hyperplane's equation and divide by the square root of the summation of coefficients' square (or norm of the w vector)

- **Distance between two parallel hyperplanes**

- Given two parallel hyperplanes, $w^T x + w_0 = 0$ and $w^T x + w_1 = 0$
- Distance between them is given as: $d = \frac{|w_1 - w_2|}{\|w\|}$