Support Vector Regression (SVR)

> Can we do regression with SVM ?

Ans: yes,

lets understand it, with an example:

- Imagine we have two features f1,f2 and we have some data points

The main intuition behind SVR is to find a best fitting line,

- Such that the maximum error (ϵ) between y_i and $y_i\hat{} = w^T x_i + b$
    - is as minimum as possible

Thus making the loss function as:

- $min_{(w,b)}\ \frac{1}{2}||w||^2 + C.\epsilon$

such that

- $y_i - y_i\hat{} \leq \epsilon$
- and also $y_i\hat{} - y_i \leq \epsilon$
    - with $\epsilon \geq 0$

Note: There is also version of SVR called kernalized SVR

- SVR is not very popular, hence we tend on not using it much