$\mathcal{F}$ , $\mathcal{F}^*$ , $\mathcal{U} \in \mathcal{F}^*$

$\langle \cdot, \cdot \rangle$

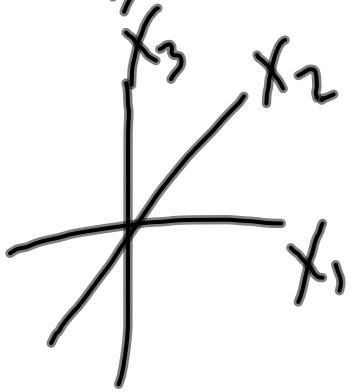
$\mathcal{U} : \mathcal{F} \to \mathbb{R}$

$\mathcal{U}f = f(x_i)$

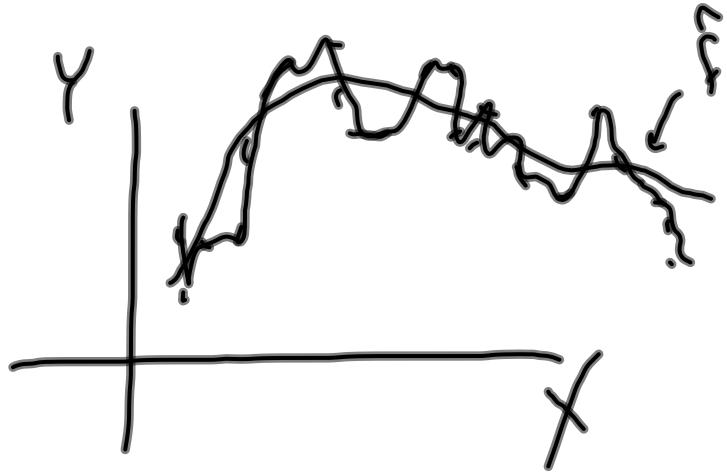
$\|\mathcal{U}\| < \infty$

$\Rightarrow \exists f_* \in \mathcal{F}$

$\sum x_j \beta_j$




$\mathcal{U}f = \langle f_*, f \rangle$

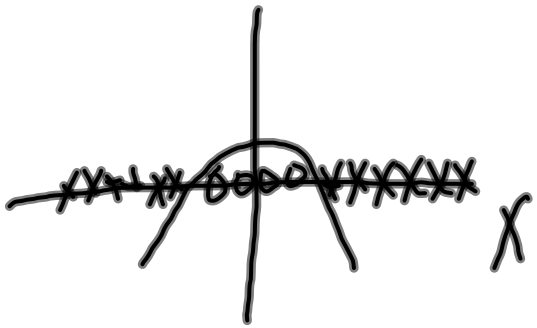



$$\hat{f} = \sum \theta_i \psi_i$$

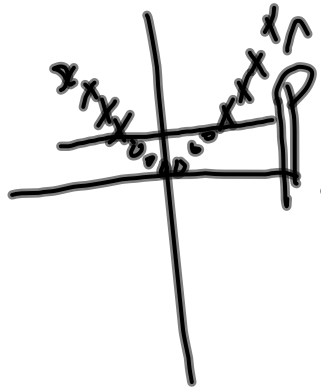
$$\theta_i = \langle \hat{f}, \psi_i \rangle$$

$$\|\theta\|_2 < t$$

$$K_d(x,y) = (x^T y + 1)^d$$




$$\hat{f} \in \mathcal{F}$$




$$\sum l_f + \lambda \|f\|_{\mathcal{H}_K}$$

$\hat{R}_{\ell_\beta}$ Isn't convex for 0-1 loss

↳ use surrogates