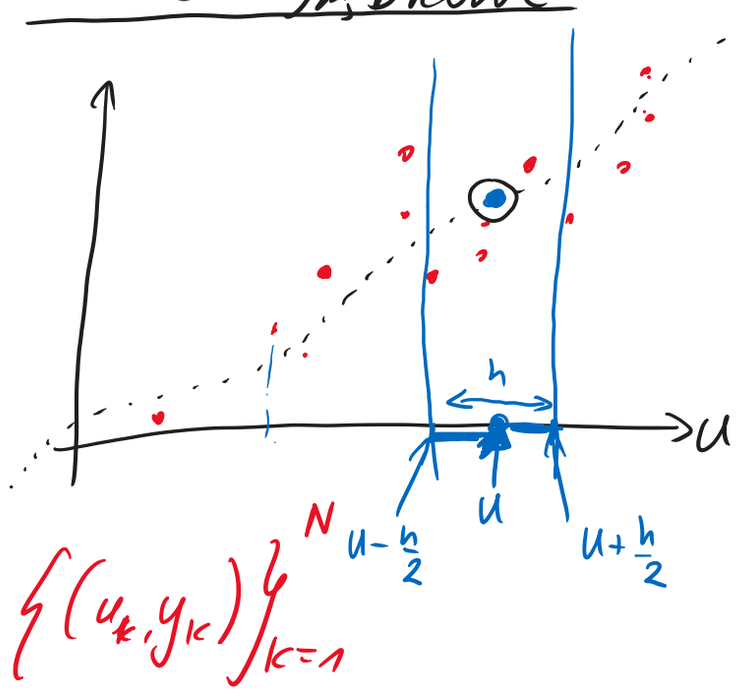
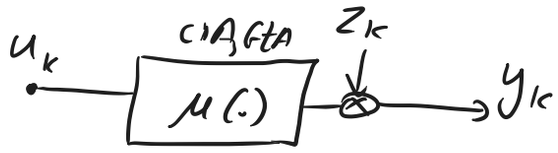
METODY JĄDROWE



$\{(u_k, y_{1k})\}_{k=1}^{N}$



$E z_{1k} = 0$

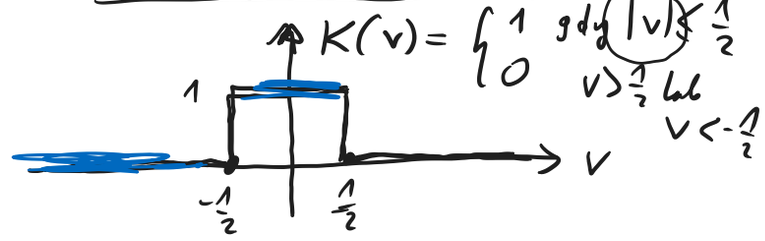
PRAWDZIWA NIEZNANA ?

$$\leftrightarrow R(u) = E\{y_{1k} | u_{1k} = u\} = \mu(u)$$

KERNEL

FUNKCJA JĄDRA

$$K(v) = \begin{cases} 1 & \text{gdy } |v| \leq \frac{1}{2} \\ 0 & v > \frac{1}{2} \text{ lub } v < -\frac{1}{2} \end{cases}$$



SELEKCJA

$$K\left(\frac{u_{1k} - u}{h}\right) \stackrel{?}{=} 1$$

$$\left|\frac{u_{1k} - u}{h}\right| \leq \frac{1}{2} \rightarrow |u_{1k} - u| \leq \frac{1}{2} h$$

JEŻELI u_k LEŻY OKOŁO u

$\leq$ R.E.

curse of dimensionality

$$\hat{\mu}_N(u) = \frac{\sum_{k=1}^{N} y_k \cdot K\left(\frac{u_{1k} - u}{h}\right)}{\sum_{k=1}^{N} K\left(\frac{u_k - u}{h}\right)}$$

$N \rightarrow \infty$

$h(N) \rightarrow 0$
$N h^d(N) \rightarrow \infty$
$\Big] \rightarrow \quad \hat{\mu}(u) \rightarrow \mu(u)$

WAND, JONES – KERNEL SMOOTHING, ...