P
T
P
$_exxample.dat;$
$f:$
$X\rightarrow$
Y
$(x_1,y_1),\cdots,(x_n,y_n)$
A
H
$h\approx$
f
$(C.southwest)+$
$(-0.5,-0.4)$
$(D.northeast)+$
$(1,+0.5)$
$_1$
x_n
y_n
(x_n,y_n)
$f:$
$X\rightarrow$
Y
h
f
$H=$
$\{h\}$

$_flow, belowof=$
$problem](data);[block_flow, belowof=$
$data](preprocess)-;[block_flow, belowof=$
$preprocess, nodedistance=$
$2.5cm](split),;[block_flow, belowof=$
$split, nodedistance=$
$3cm](selection);[block_flow, belowof=$
$selection](training);[block_flow, leftof=$
$training, nodedistance=$
$3cm](tuning);[block_flow, belowof=$
$training](evaluation);[decision, belowof=$
$evaluation](decide)OK?;[block_flow, rightof=$
$decide, nodedistance=$
$3cm](stop);[line](problem)-$
$-(data);[line](data)-$
$-(preprocess);[line](preprocess)-$
$-(split);[line](split)-$
$-(selection);[line](selection)-$
$-(training);[line](training)-$
$-(evaluation);[line](evaluation)-$
$-(decide);[line](decide)-$
$-node[anchor=$
$south](stop);[line](tuning)-$
$-(training);[line](decide)-$
$|node[anchor=$
$east](tuning);$

$$Y=PX \tag{1}$$

$$S_X=\frac{1}{n-1}XX^T \tag{2}$$

$$S_Y=\frac{1}{n-1}YY^T=\frac{1}{n-1}(PX)(PX)^T=\frac{1}{n-1}PXX^TP^T=\frac{1}{n-1}P(XX^T)P^T=\frac{1}{n-1}PAP^T \tag{3}$$

$A=$
XX^T

$$A=EDE^T \tag{4}$$

$$S_Y=\frac{1}{n-1}PAP^T=\frac{1}{n-1}P(P^TDP)P^T=\frac{1}{n-1}(PP^T)D(PP^T)=\frac{1}{n-1}(PP^{-1})D(PP^{-1})=\frac{1}{n-1}D \tag{5}$$

S_Y
$97\%-$
98%

$$y^{'}=\{\ y^\lambda-1\lambda\lambda\neq0\log y\lambda=0 \tag{6}$$

λ