?
en-
sem-
ble
?
?
(x−
t)+
(t−
x)+

$(x-t)_+ = \max\{0, x-t\} = \{\, x - tx > t, 0x \leq t.$

t
t
X_j
x_{ij}
X_j
$\mathcal{C} = \{(X_j - t)_+, (t - X_j)_+\}, with t \in \{x_{1,j}, x_{2,j}, \ldots x_{N,j}\}, y\ j = 1, 2, \ldots, p.$

??

$h_1(X) = h(X_j - x_{ij})$

$h_2(X) = h(x_{i,j} - X_j)$

$_p air.png The constructed reflected pairs.$
X_j
x_{ij}
??
2Np
2N
β

$$f(X) = \beta_0 + \sum_{m=1}^{M} \beta_m h_m(X),$$

$h_m(X)$
C
M
$\hat{f}(X) =$
$\hat{\beta}_0 =$
$h_0(X) =$
1
C
M
x_{ij}
$\hat{f}(X) = \hat{\beta}_0 + \hat{\beta}_1 h_1(X) + \hat{\beta}_2 h_2(X).$

h_i
$\hat{\beta}_i$
β
M
$h_i(X)$
λ
$\hat{f}_\lambda$
λ

$$GCV(\lambda) = \frac{\sum_{i=1}^{N} (y_i - \hat{f}_\lambda(x_i))^2}{\left(\frac{1 - M(\lambda)}{N}\right)^2},$$

$M(\lambda)$
X
h_ℓ
x_{ij}
$h_0 =$
1
M
M
$\hat{\beta}_{M+1} h_\ell(X) \cdot$
$(X_j -$
$t)+$
$+\hat{\beta} M + 2 h_\ell(X) \cdot$
$(t -$
$X_j)_+$

$$\hat{f}(X) = \hat{\beta}_0 + \sum_{m=1}^{M} \hat{\beta}_m h_m(X) + \hat{\beta}_{M+1} h_\ell(X) \cdot (X_j - t)_+ + \hat{\beta}_{M+2} h_\ell(X) \cdot (t - X_j)_+,$$

$h_\ell \in$