

Data: Training set $\mathcal{D}$, candidate features $\mathcal{F} = \{f_1, f_2, \dots, f_K\}$

Result: An optimal feature set $\mathcal{F}^*$

begin

$\mathcal{F}^* \leftarrow \beta_0$

/* forward selection */

for $f \in \mathcal{F}$ **do**

$\mathcal{F}^* \leftarrow f$

fit logistic model

perform F test

if $P > 0.1$ **then**

remove f from $\mathcal{F}^*$

end

end

/*backward*/

for $f \in \mathcal{F}^*$ **do**

remove f from $\mathcal{F}^*$

fit logistic model with current $\mathcal{F}^*$

perform F test

if $P > 0.1$ **then**

continue

else

add f back to $\mathcal{F}^*$

end

end

end