

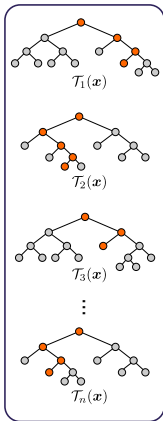
Input:

sample

$$\mathbf{x} \in \mathbb{R}^p$$

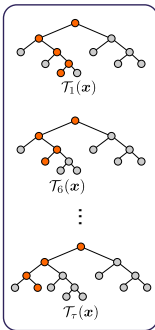
trained RF

$$\mathcal{T} : \{\mathcal{T}_1, \dots, \mathcal{T}_n\}$$



step 1

(tree) rule
pre-selection



step 2

map to vectors
in \mathbb{R}^p

$$\mathcal{T}_1, \mathbf{x} \mapsto \mathbf{v}_1$$

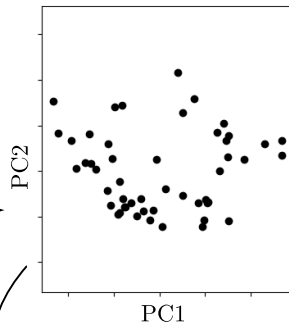
$$\mathcal{T}_6, \mathbf{x} \mapsto \mathbf{v}_6$$

\vdots

$$\mathcal{T}_\tau, \mathbf{x} \mapsto \mathbf{v}_\tau$$

step 3

projection
(PCA)

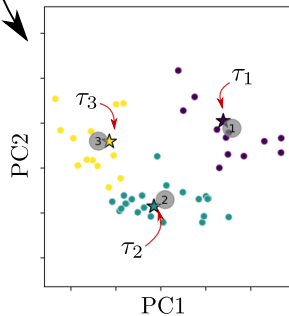


clustering
(K-Means)

step 4

extraction
final rules

$$\{\tau_1, \tau_2, \tau_3\}$$



Output:

$$\tilde{y} = \sum_{k=1}^K w_k \mathcal{T}_{\tau_k}(\mathbf{x})$$

Explanation for \mathbf{x}		
\mathcal{T}_{τ_1}	Rulepath 1	
	Initial prediction:	0.2377
	num. donations > 3.50	→ 0.3212
\mathcal{T}_{τ_2}	Rulepath 2	
	Initial prediction:	0.2423
	months first donation > 27.00	→ 0.3333
\mathcal{T}_{τ_3}	Rulepath 3	
	Initial prediction:	0.2454
	tot donated ml > 875.00	→ 0.3448
	Final Prediction	
	months first donation ≤ 44.00	→ 0.5872
	months first donation ≤ 27.00	→ 0.3333
	Final Prediction	
	months last donation > 3.50	→ 0.3750
	final prediction:	→ 0.3750