Bagging	l	Random	forest
2010 1	•		1

Bagging: Boostrap AGG regretion: U: Sample bragging Key: Repeatedly sample (with replacement!) a collection of training examples and train a model on that sample

流程: for t=レー・・T do

for s=1,··, S do 注意, 是对每一个比都重 is v Uniform (い、水) 11米样-伤St $St = \{(\chi^{(is)}, y^{(is)})\}_{s=1}^{s} \leftarrow boostrap sample.$ ht = train (St). < classifier

return has = aggregate*chi,..., ht)

* for classification: majority vote

for regression: average

1) teature Bagging key: select subset of feature as well for 1=1, ... , T do

for s=1, ... , S do

Ms ~ Uniform (1,..., M)

for i= 1, ..., N do

Dt = { (20, y1) } =1

ht = train (Dt)

him = aggregate (hi, ..., ht)

Random Forest: Key: Combine prediction of many diverse decision trees to reduce variability

If B r.v. all have variance 6° , Then $\frac{1}{8} \sum_{b=1}^{8} \chi^{(b)}$'s var

Campus

feature bagging	(sample) bagging and a specific variant of to train decision trees
	由一个样本(with replacement)
ラ对树的每个结片	民,先从该结点属性集合中随机选一个于集,再 属性。设(集台)=d, 日集1=k,若k=d:则
工子集中选最优点	影性。设(集台) = d, H集1 = k, 若 k=d:则
vanilla decision tra	se splitting node;若 k=1,则随机进一个作结点
建议	$\frac{169 \cdot d}{1} \cdot \frac{1}{2} $
上 迷 信医中的 妥	样有一个优点:每个基学习器只用了dataset中63.2
样本、剩下36.8	%可用作 validation set 来对这化能力作包外估计
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