

模型融合—Stacking

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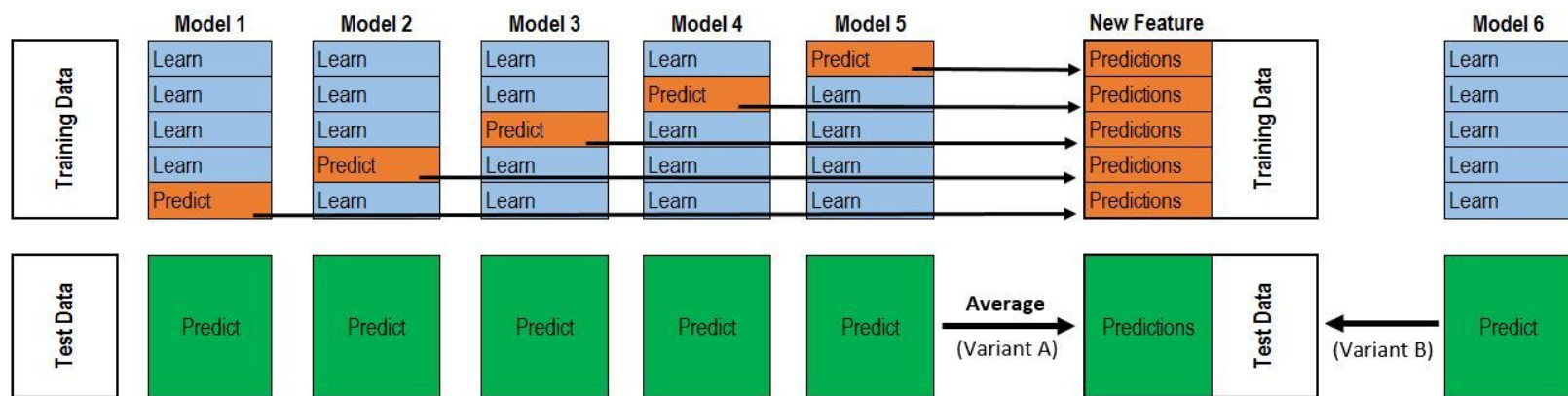
摘要

- 基本思想及方法
- 实验结果

1、基本思想及方法

$$\begin{array}{ccc} \begin{pmatrix} \vdots \\ P_1 \\ \vdots \\ \vdots \end{pmatrix} \begin{pmatrix} \vdots \\ P_2 \\ \vdots \\ \vdots \end{pmatrix} \begin{pmatrix} \vdots \\ P_3 \\ \vdots \\ \vdots \end{pmatrix} & \Rightarrow & \overbrace{\begin{pmatrix} \vdots & \vdots & \vdots \\ P_1 & P_2 & P_3 \\ \vdots & \vdots & \vdots \\ \vdots & \vdots & \vdots \end{pmatrix}}^{\text{train2}} \\ \\ \begin{pmatrix} \vdots \\ T_1 \\ \vdots \\ \vdots \end{pmatrix} \begin{pmatrix} \vdots \\ T_2 \\ \vdots \\ \vdots \end{pmatrix} \begin{pmatrix} \vdots \\ T_3 \\ \vdots \\ \vdots \end{pmatrix} & \Rightarrow & \overbrace{\begin{pmatrix} \vdots & \vdots & \vdots \\ T_1 & T_2 & T_3 \\ \vdots & \vdots & \vdots \\ \vdots & \vdots & \vdots \end{pmatrix}}^{\text{test2}} \end{array}$$

$$\begin{array}{ccc} \overbrace{\begin{pmatrix} \vdots & \vdots & \vdots \\ P_1 & P_2 & P_3 \\ \vdots & \vdots & \vdots \\ \vdots & \vdots & \vdots \end{pmatrix}}^{\text{train2}} & \xRightarrow{\text{train}} & \overbrace{\begin{pmatrix} \vdots & \vdots & \vdots \\ T_1 & T_2 & T_3 \\ \vdots & \vdots & \vdots \\ \vdots & \vdots & \vdots \end{pmatrix}}^{\text{test2}} \xRightarrow{\text{predict}} \begin{pmatrix} \vdots \\ \text{pred} \\ \vdots \\ \vdots \end{pmatrix} \end{array}$$



2、实验结果

- 分类任务

combine1	98.29%	70.71%
combine2	98.07%	69.64%
combine3	100%	69.96%
combine4	100%	65.67%
stacking1	68.92%	70.92%

说明：

combine1: unigram-TF + unigram-normTF + bigram-TF + bigram-one-hot -> svm-gauss

combine2: unigram-TF + bigram-one-hot -> svm-gauss

combine3: unigram-TF + bigram-one-hot + trigram-one-hot -> svm-gauss

combine4: P_svm-gauss_unigram-TF + P_svm-gauss_unigram-normTF + P_svm-gauss_bigram-TF + P_svm-gauss_bigram-one-hot -> svm-gauss

stacking1: unigram-TF + unigram-normTF + bigram-TF + bigram-one-hot + trigram-one-hot -> svm-gauss -> svm-gauss

- 回归任务

baseline	0.8253/0.9095	0.8090/0.9032
combine	0.8317/0.9113	0.8047/0.9054
stacking1	0.7856/0.8935	0.8176/0.9070

说明：

combine: unigram-TF-disc + bigram-TF-disc + bigram-one-hot-cont + trigram-tf-cont + trigram-one-hot-disc + basefeature

stacking1: base-feat + unigram-TF + unigram-normTF + bigram-TF + bigram-one-hot + trigram-one-hot -> stacking -> svr-gauss

END