

Regular Bootstrap Forest analysis

Body Fat - JMP Pro [2]

File Edit Tables Rows Cols DOE Analyze Graph Tools Add-Ins View Window Help

Body Fat

Bootstrap Forest - JMP Pro [2]

Builds a collection of decision trees using random sampling and averages the results to predict a response.

Select Columns

26 Columns

Enter column name

Y, Response

Percent body fat
optional

X, Factor

Age (years)
Weight (lbs)
Height (inches)
Neck circumference (cm)
Chest circumference (cm)
Abdomen circumference (cm)
Hip circumference (cm)
Thigh circumference (cm)
Knee circumference (cm)
Ankle circumference (cm)
Biceps (extended) circumference (cm)
Forearm circumference (cm)
Wrist circumference (cm)
Prediction Formulas (11/0)
Validation

Options

Method Bootstrap Forest

Validation Portion 0

Informative Missing

Ordinal Restricts Order

Weight optional numeric

Freq optional numeric

Validation Validation

By optional

OK Cancel Remove Recall Help

Bootstrap Forest for Percent body fat

Specifications

| | | | |
|------------------------------------|------------------|--------------------------|-----|
| Target | Percent body fat | Training Rows: | 180 |
| Validation Column: | Validation | Validation Rows: | 72 |
| | | Test Rows: | 0 |
| Number of Trees in the Forest: | 100 | Number of Terms: | 13 |
| Number of Terms Sampled per Split: | 10 | Bootstrap Samples: | 180 |
| | | Minimum Splits per Tree: | 10 |
| | | Minimum Size Split: | 5 |

Overall Statistics

| Individual Trees | RASE | |
|------------------|----------|--|
| In Bag | 2.014881 | |
| Out of Bag | 6.188464 | |

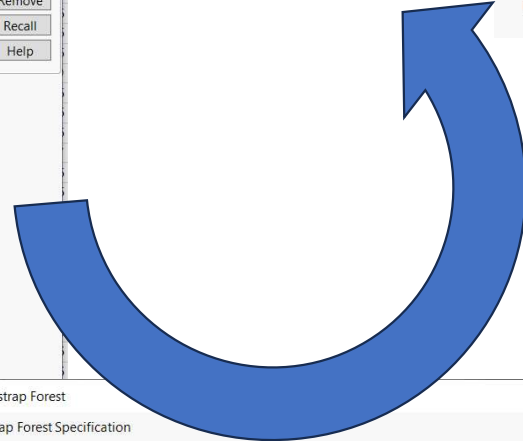
| | RSquare | RASE | N |
|------------|---------|-----------|-----|
| Training | 0.899 | 2.6007899 | 180 |
| Validation | 0.653 | 5.1236646 | 72 |

Cumulative Validation

Per-Tree Summaries

Actual by Predicted Plot

Training Set 50



Bootstrap Forest

Bootstrap Forest Specification

Number of Rows: 252

Number of Terms: 13

Forest

Number of Trees in the Forest: 100

Number of Terms Sampled per Split: 10

Bootstrap Sample Rate: 1

Minimum Splits per Tree: 10

Maximum Splits per Tree: 2000

Minimum Size Split: 5

Early Stopping

Multiple Fits

Multiple Fits over Number of Terms

Max Number of Terms: 10

Use Tuning Design Table

Reproducibility

Suppress Multithreading

Random Seed: 0

OK Cancel

Profit/Cost Decision Matrix

Specify Profit Matrix

Each matrix entry is the profit if you predict the response in the column when the response in the row is the actual response.

Enter values that reflect profits for correct decisions on the diagonal.
Enter values (usually negative) that reflect profits for incorrect decisions elsewhere.
Use the Undecided column to reflect profits for an alternative decision.

When you save prediction formulas, these values will be used to create best decision columns.
The best decision is the one with greatest expected profit.

Decision or Prediction

Actual Undecided

Save to column as property.

OK Cancel

Bootstrap Forest analysis using Tuning Design Table

Builds a collection of decision trees using random sampling and averages the results to predict response.

Select Columns

Cast Selected Columns into Roles

Y, Response: Percent body fat

X, Factor: Age (years), Weight (lbs), Neck circumference (cm), Abdomen circumference (cm), Hip circumference (cm), Thigh circumference (cm), Knee circumference (cm), Ankle circumference (cm), Biceps (extended) circumference (cm), Forearm circumference (cm), Wrist circumference (cm), Prediction Formulas (11/0), Validation

Options

Method: Bootstrap Forest

Validation Portion: 0

Bootstrap Forest Specification

Number of Rows: 252
Number of Terms: 13

Forest

Number of Trees in the Forest: 100
Number of Terms Sampled per Split: 10
Bootstrap Sample Rate: 1
Minimum Splits per Tree: 10
Maximum Splits per Tree: 2000
Minimum Size Split: 5

Multiple Fits

Multiple Fits over Number of Terms
Max Number of Terms: 10

Reproducibility

Use Tuning Design Table
 Suppress Multithreading
Random Seed: 0

Choose Tuning Design Table

RF Tuning
FPC1-20 of FT and... Übersicht_XGBoost
Other...

OK Cancel

Bootstrap Forest for Percent body fat

Model Validation-Set Summaries

The fit below was the best of these models fit.

| N Terms | N Trees | Specified | RSquare |
|---------|---------|-----------|---------|
| 3 | 250 | 250 | 0.5775 |
| 6 | 1200 | 1200 | 0.6371 |

Specifications

| Target | Percent body fat | Training Rows: | 180 |
|------------------------------------|------------------|--------------------------|-----|
| Validation Column: | Validation | Validation Rows: | 72 |
| | | Test Rows: | 0 |
| Number of Trees in the Forest: | 1200 | Number of Terms: | 13 |
| Number of Terms Sampled per Split: | 6 | Bootstrap Samples: | 180 |
| | | Minimum Splits per Tree: | 50 |
| | | Minimum Size Split: | 10 |

Overall Statistics

| Individual | Trees | | |
|------------|----------|-----------|-----|
| | RASE | | |
| In Bag | 3.154653 | | |
| Out of Bag | 6.060150 | | |
| | RSquare | RASE | N |
| Training | 0.809 | 3.5820597 | 180 |
| Validation | 0.637 | 5.2417974 | 72 |

Profit/Cost Decision Matrix

Specify Profit Matrix

Each matrix entry is the profit if you predict the response in the column when the response in the row is the actual response.

Enter values that reflect profits for correct decisions on the diagonal.
Enter values (usually negative) that reflect profits for incorrect decisions elsewhere.
Use the Undecided column to reflect profits for an alternative decision.

When you save prediction formulas, these values will be used to create best decision columns.
The best decision is the one with greatest expected profit.

Decision or Prediction

Actual: Undecided

Save to column as property.

OK Cancel

RF Tuning - JMP Pro [2]

| Rows | Number of Trees | Minimum Splits per Tree | Maximum Splits per Tree | Minimum Size Split | Portion Bootstrap | Number Terms |
|----------|-----------------|-------------------------|-------------------------|--------------------|-------------------|--------------|
| All rows | 2 | 1 | 250 | 5 | 100 | 5 |
| Selected | 0 | 2 | 1200 | 50 | 1000 | 10 |
| Excluded | 0 | | | | | 0.5 |
| Hidden | 0 | | | | | 1 |
| Labeled | 0 | | | | | 6 |