

A-Z Machine Learning using Azure Machine Learning (AzureML)

Hands on AzureML: From Azure Machine Learning Introduction to Advance Machine Learning Algorithms. No Coding Required.

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Gift This Course



Tune Model Hyperparameters

Models and Parameters



Two-Class Logistic Regression

1

Create trainer mode

Single Parameter

Optimization tolerance

1E-07

L1 regularization weight

1

L2 regularization weight

1

Memory size for L-BFGS

20

Random number seed

☒ Allow unknown categorical levels



Two-Class Boosted Decision...

1

Create trainer mode

Single Parameter

Maximum number of leaves per tree

20

Minimum number of samples per leaf node

10

Learning rate

0.2

Number of trees constructed

100

Random number seed

☒ Allow unknown categorical levels



Two-Class Support Vector M...

1

Create trainer mode

Single Parameter

Number of iterations

1

Lambda

0.001

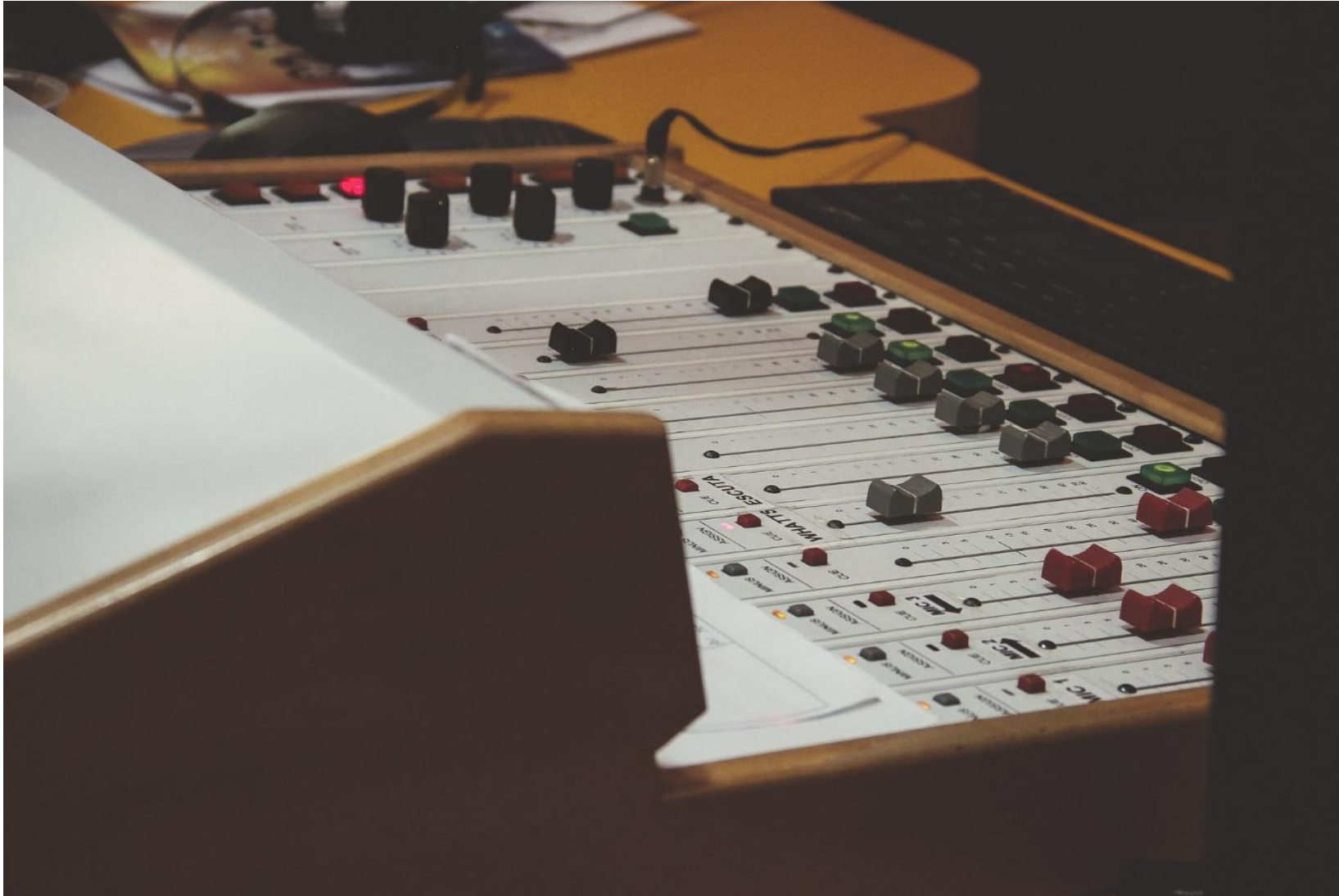
☒ Normalize features

☐ Project to the unit-sphere

Random number seed

☒ Allow unknown categorical levels

What are Hyperparameters?



Model Parameters

- Decision Trees
 - Maximum number of leaves per tree
 - Minimum number of samples per leaf node
 - Learning rate
 - Number of trees to construct
- Logistic regression
 - Optimization tolerance
 - L1 regularization weight
 - L2 regularization weight
 - Memory size for L-BFGS
-

Tune Model Hyperparameters

- Helps in determining the best possible combination of hyperparameters
- Also known as hyperparameter optimization
- Performance metric to measure
 - Accuracy
 - Precision
 - Recall
 - AUC
 - F1Score

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Parameter Sweeping Modes

- Random Grid
- Entire Grid
- Random Sweep

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What is a Grid?

- Cartesian Product of Parameters
- Parameter 1 → 1, 2, 3
- Parameter 2 → A, B, C, D

Parameter 1 →

← Parameter 2

	1	2	3
A	A, 1	A, 2	A, 3
B	B, 1	B, 2	B, 3
C	C, 1	C, 2	C, 3
D	D, 1	D, 2	D, 3

Random Grid

← Parameter 2

Parameter 1 →

	1	2	3
A	A, 1	A, 2	A, 3
B	B, 1	B, 2	B, 3
C	C, 1	C, 2	C, 3
D	D, 1	D, 2	D, 3

Entire Grid

← Parameter 2

Parameter 1 →

	1	2	3
A	A, 1	A, 2	A, 3
B	B, 1	B, 2	B, 3
C	C, 1	C, 2	C, 3
D	D, 1	D, 2	D, 3

Random Sweep

Parameter 1 → Range 1....4

Parameter 2 → Range A....D

Iterations

P1, P2

P1, P2

P1, P2

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P1, P2

Thank You...!