

Assessment # 2 - Supervised Learning & Classification Metrics

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Assessment # 2 - Supervised Learning & Classification Metrics

After watching following 3 videos, answer the quiz:

<https://www.youtube.com/watch?v=Muz3POINoLdc>

<https://www.youtube.com/watch?v=wpp3VfzgNcl>

<https://www.youtube.com/watch?v=jJ7ff7Gcq34>

Your email (b18101006@gmail.com) was recorded when you submitted this form.

Name *

Abdullah Jafri

Email *

b18101006@gmail.com

Phone *

03138667347

Seat Number *

B18101006

Class Roll Number *

B18101006

Quiz Questions

What is supervised learning? *

- ☒ A type of machine learning where the algorithm is trained on labeled data.
- ☐ A type of machine learning where the algorithm is trained on unlabeled data.
- ☐ A type of machine learning where the algorithm is trained on both labeled and unlabeled data.

What are the two main types of supervised learning algorithms? *

- ☐ Clustering and dimensionality reduction.
- ☐ Reinforcement learning and natural language processing.
- ☒ Regression and classification.

What is the difference between regression and classification?

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- ☐ Regression algorithms predict discrete values, while classification algorithms predict continuous values.
- ☒ Regression algorithms predict continuous values, while classification algorithms predict discrete values.
- ☐ Regression algorithms are used for predicting future values, while classification algorithms are used for predicting categories.

What is a labeled dataset?

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- ☐ A dataset that contains only the labels.
- ☐ A dataset that contains only the features.
- ☒ A dataset that contains both the features and the labels.

What is a training set?

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- ☐ The entire labeled dataset.
- ☒ A subset of the labeled dataset that is used to train the algorithm.
- ☐ A subset of the labeled dataset that is used to test the algorithm.

What is a test set?

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- ☐ The entire labeled dataset.
- ☐ A subset of the labeled dataset that is used to train the algorithm.
- ☒ A subset of the labeled dataset that is used to test the algorithm.

What is the goal of supervised learning?

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- ☒ To learn the relationship between the features and the labels.
- ☐ To predict the labels for new data.
- ☐ To both learn the relationship between the features and the labels and predict the labels for new data.

What are some of the challenges of supervised learning?

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- ☒ The need for labeled data.
- ☒ The curse of dimensionality.
- ☒ The difficulty of finding the right algorithm for the problem.

What are some of the benefits of supervised learning?

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- ☒ It can be used to solve a wide variety of problems.
- ☒ It is relatively easy to understand and implement.
- ☒ It can be very accurate.

What are some of the applications of supervised learning?

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- ☒ Spam filtering.
- ☒ Fraud detection.
- ☒ Medical diagnosis.

What is a confusion matrix?

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- ☐ A table that summarizes the performance of a clustering algorithm.
- ☒ A table that summarizes the performance of a classification algorithm.
- ☐ A table that summarizes the performance of a regression algorithm.

What are the four quadrants of a confusion matrix?

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- ☒ True Positive (TP), True Negative (TN), False Positive (FP), False Negative (FN)
- ☐ Actual Positive (AP), Actual Negative (AN), Predicted Positive (PP), Predicted Negative (PN)
- ☐ Correct Positive (CP), Incorrect Positive (IP), Correct Negative (CN), Incorrect Positive (IN)

What is the True Positive (TP) percentage?

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- ☐ The percentage of actual negatives that were correctly classified as negatives.
- ☐ The percentage of all predictions that were correct.

- ☒ The percentage of actual positives that were correctly classified as positives.

What is the False Positive (FP) percentage?

*

- ☐ The percentage of actual positives that were incorrectly classified as negatives.
- ☒ The percentage of actual negatives that were incorrectly classified as positives.
- ☐ The percentage of all predictions that were incorrect.

What is the True Negative (TN) percentage?

*

- ☒ The percentage of actual negatives that were correctly classified as negatives.
- ☐ The percentage of actual positives that were correctly classified as positives.
- ☐ The percentage of all predictions that were correct.

What is the False Negative (FN) percentage?

*

- ☐ The percentage of actual positives that were incorrectly classified as negatives.
- ☒ The percentage of actual negatives that were incorrectly classified as positives.
- ☐ The percentage of all predictions that were incorrect.

What are the limitations of confusion matrices?

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- ☒ They only provide a snapshot of the performance of a classification algorithm.
- ☒ They do not take into account the computation cost of misclassification.
- ☒ They can be difficult to interpret for complex classification problems.