



CTR MODELING (1 point possible)

Why is CTR modeling crucial for online advertising?

- ☐ Amount advertisers pay is often based on the effectiveness of the ad (e.g., obtaining a click or conversion)
- ☐ Publishers want to maximize the money they make hosting ads (hence want to host ads with high CTR)
- ☐ 3rd party matchmakers need to make good matches to stay in business

?

Note: Make sure you select all of the correct options—there may be more than one!

CHECK

LOSS FUNCTIONS (1 point possible)

What is the purpose of a loss function?

- ☐ It's a way to penalize a model for incorrect predictions
- ☐ It precisely defines the optimization problem to be solved for a particular learning model
- ☐ It creates new features for use in the model

?

Note: Make sure you select all of the correct options—there may be more than one!

CHECK

CONVEX LOSS FUNCTIONS (1 point possible)

Which of the following loss functions are convex?

☐ Log-loss

☐ 0 / 1 loss

?

Note: Make sure you select all of the correct options—there may be more than one!

CHECK

LOGISTIC REGRESSION WITH REGULARIZATION (1 point possible)

Select the true statements for logistic regression with regularization:

☐ When lambda equals one, it provides the same result as standard logistic regression

☐ Can be framed as minimizing a convex function

☐ Closed-form solution exists

?

Note: Make sure you select all of the correct options—there may be more than one!

CHECK

THE LOGISTIC FUNCTION (1 point possible)

The logistic function $1 / (1 + \exp(-z))$:

- ☐ Has a probabilistic interpretation
- ☐ Approaches 0 for large positive inputs
- ☐ Returns values between 0 and 1

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CHECK

CLASSIFICATION THRESHOLDS (1 point possible)

When using probabilistic predictions to classify, we should vary the threshold based on the relative harm of false positives relative to false negatives.

- ☐ True
- ☐ False

?

CHECK

SPAM EXAMPLE (1 point possible)

In the spam example, if we use a threshold of 0 for spam classification, what percentage of emails will be classified as spam?

- ☐ 0%
- ☐ 50%

☐ 100%

?

CHECK

TRANSFORMING CATEGORICAL FEATURES (1 point possible)

Representing a categorical feature by a single numeric variable (with a variety of values) can introduce relationships / constraints that were non-existent prior to the transformation.

☐ True

☐ False

?

CHECK

SPARSE REPRESENTATIONS (1 point possible)

Using a sparse representation of our data can:

☐ Save storage space

☐ Reduce computational costs

?

Note: Make sure you select all of the correct options—there may be more than one!

CHECK

FEATURE COLLISIONS (1 point possible)

With feature hashing it is possible to hash different features to the same bucket.

☐ True

☐ False

?

CHECK

FEATURE HASHING (1 point possible)

Feature hashing requires communication of intermediate results across nodes.

☐ True

☐ False

?

CHECK

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