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2. Hinge Loss

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Project due Mar 1, 2023 08:59 -03 Completed

In this project you will be implementing linear classifiers beginning with the Perceptron by writing your loss function, a hinge-loss function. For this function you are given the model θ and θ_0 . Additionally, you are given a feature matrix in which the rows are feature vectors, columns are individual features, and a vector of labels representing the actual sentiment of each data sample.

Hinge Loss on One Data Sample

1.0/1 point (graded)

First, implement the basic hinge loss calculation on a single data-point. Instead of the entire feature matrix, you are given one row, representing the feature vector of a single data sample, and its label, which is the ground truth sentiment of the data sample.

Reminder: You can implement this function locally first, and run `python test.py` in your `sentiment_analysis` directory to validate basic functionality before checking against the test suite.

Available Functions: You have access to the NumPy python library as `np`; No need to import it.

```
1 def hinge_loss_single(feature_vector, label, theta, theta_0):
2     """
3     Finds the hinge loss on a single data point given specific classification
4     parameters.
5
6     Args:
7         `feature_vector` - numpy array describing the given data point
8         `label` - float, the correct classification of the data point.
9         `theta` - numpy array describing the linear classifier.
10        `theta_0` - float representing the offset parameter.
11
12    Returns:
13        the hinge loss, as a float, associated with the given data point and
14        parameters.
15    """
```

Press ESC then TAB or click outside of the code editor to exit

Correct

Test results

CORRECT

```
2     return np.mean([hinge_loss_single(feature_vector, label, theta, theta_0)
```

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