

Homework 1

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1 Supervised Learning

Problem A: Feature Representation

Solution A:

The matrix representing the four commit messages is as follows:

$$\begin{bmatrix} 1 & 1 & 1 & 0 & 0 \\ 0 & 0 & 1 & 1 & 1 \\ 0 & 0 & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 & 0 \end{bmatrix}$$

Based on the bag-of-words representation, each row in the matrix is a feature vector for the corresponding sentence. In each vector, there is a feature per word in the dictionary (bug, fix, correct, error, wrong), and the binary value for each feature represents whether the word is present in the sentence.

2 Multi-Layer Perceptron

Problem A: Title

i. Title

Solution A.i: *Your solution here*

ii. Title

Solution A.ii: *Your solution here*