

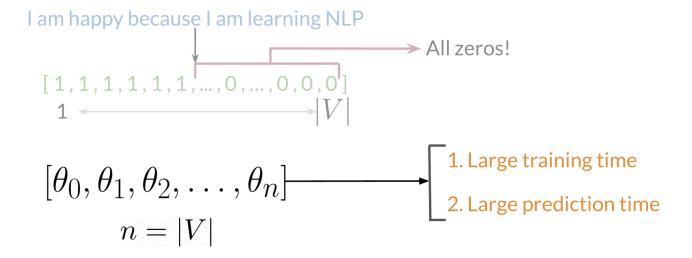


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## Vocabulary & Feature Extraction

Given a tweet, or some text, you can represent it as a vector of dimension V, where V corresponds to your vocabulary size. If you had the tweet "I am happy because I am learning NLP", then you would put a 1 in the corresponding index for any word in the tweet, and a 0 otherwise.



As you can see, as V gets larger, the vector becomes more sparse. Furthermore, we end up having many more features and end up training  $\theta$  V parameters. This could result in larger training time, and large prediction time.

