**Word2Vec Model sheet**

**Goals:**

The goal of the Word2Vec model is to embed words and the context of the words into an n-dimensional plane such that model can predict the surrounding words and can be defined by a vector. Defining the words or sentences as vectors allows for similarities to be computed, allowing us to determine which phrases or pieces of text are similar to each other.

**Metrics & Limitations:**

The metrics used are NLLLoss, which is a metric that is also known as Negative Log Likelihood and describes the weight function either as the sum of 1 over the weight times by the weight times by the sample if ‘mean’ or as a summation of the negative weight with the sample if ‘sum’.

The limitations of the model depend on the dataset, in our case we use a IMDB reviews dataset which is highly polarised in opinion, meaning neutral text is not featured at all. This polarity can be changed by using other text data crawled or gathered from book or text sources on the internet to balance out the dataset and the model.

**Learning From:**

We use a CBOW model which is known as a Continuous Bag of Words model, which consists of embeddings as a layer, and two linear layers, the first of which uses a ReLU activation function for reduction of computational cost and the second of which uses softmax outputs for its activation function. This has been used from the word2vec model described in literature.