Project Proposal: A Philosophy Classifier

To create a program which determines the philosophical underpinnings of a given statement by comparing it to a corpus of labeled philosophical statements.

Dataset:

https://www.kaggle.com/datasets/kouroshalizadeh/history-of-philosophy

Dataset contains sentences from over 50 different texts from 10 major schools of philosophy. The data in this dataset has already been extensively cleaned and documentation on the cleaning process has been provided.

Methodology

Data preprocessing:

The dataset contains over 300 000 sentences and also provides the name of the text from which it came, the author, date of publication, length, school of philosophy as well as the sentences broken down into words and in lowercase. The most important information is the sentences and the school of philosophy that it comes from but other information such as the length of the sentence, author and title may be useful as well.

To preprocess the data for our project we will extract the columns of data we want to use and remove any duplicated data check for misspelled words. We will also tokenize all words to allow our model to process them.

Machine learning model:

The goal of our model is to determine the school of philosophy that a given statement falls into. A possible machine learning model for our project is the bag of words model. This model describes the occurrence of in a text. With this model we can draw a relationship between common words that appear in certain schools of philosophy. This model is advantageous because it's easy to implement, however since it looks only at the frequency of words and not their meaning or importance, which can completely change the meaning of the text.

Another possible model is the N-gram model. This model takes sequences of words instead of individual words which can capture more of the context that the bag of words model misses and in the context of philosophical texts where the different schools may discuss similar topics this may help to differentiate between them. Both of these models do not perform as well when tested on text that is very different from the training text. For our purposes we will focus on being able to classify philosophical statements so this won't be as much of an issue.

Evaluation metric:

Confusion matrix and accuracy/precision-recall/logistic loss

Since our project is a classification problem we will use accuracy, precision and recall to evaluate our model possibly in the form of F1 scoring or AUC-ROC

Application:

The application will allow users to input philosophical text and will output the most likely school of philosophy that the text belongs to. If there is significant overlap between some schools of philosophy in certain areas then we may have it output multiple schools of philosophy.