实验报告

预处理与词频统计

首先是文本的预处理，在这一阶段我并没有使用 textblob 进行分词，而是参照网上的方法重新将文本打印了一遍，同时打印的时候每行只打印一个单词，程序中使用 createFiles(oripath,path)完成这一过程，在这一方法中调用了 createProcessFile 将单词分行打印，这样在后续读取时也可以达到分词的效果。

之后调用 lineProcess 方法对文本单词进行处理，使用 nltk 中现成的方法去停用词、提取词干，将非英文单词的部分去除，使用 countWords（path）进行词频统计。

计算 IDF-TF 值，建立向量空间

统计所有 Train 文档中出现的词干，多滤掉低频词，其他单词使用如下格式保存

Doc = {} # <word, (doc1,...,docN)>

IDF = {} # <word, IDF>

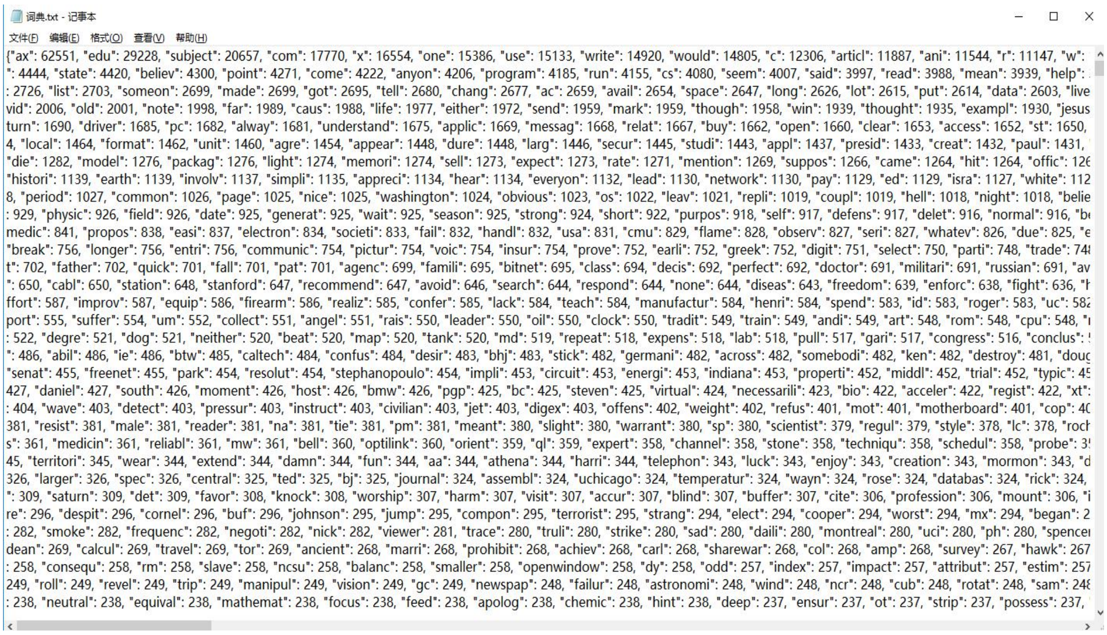
使用 CreateVSM(path)方法建立空间向量表示，每个训练数据都对应一个向量，向量形式以<category, document, (word1, para1), (word2, para2),...> 存入文件。

KNN 实现

将测试集中每个文档的{{word, TF}}与训练集<类_文件名，<word, TFIDF>>进行比较，通过余弦函数找到最相近的 20 个文档，通过 k 个文档所属类别计算出测试文档可能属于的类，返回与测试文档向量距离和最小的类。

最终准确率在 0.78 左右

词频统计



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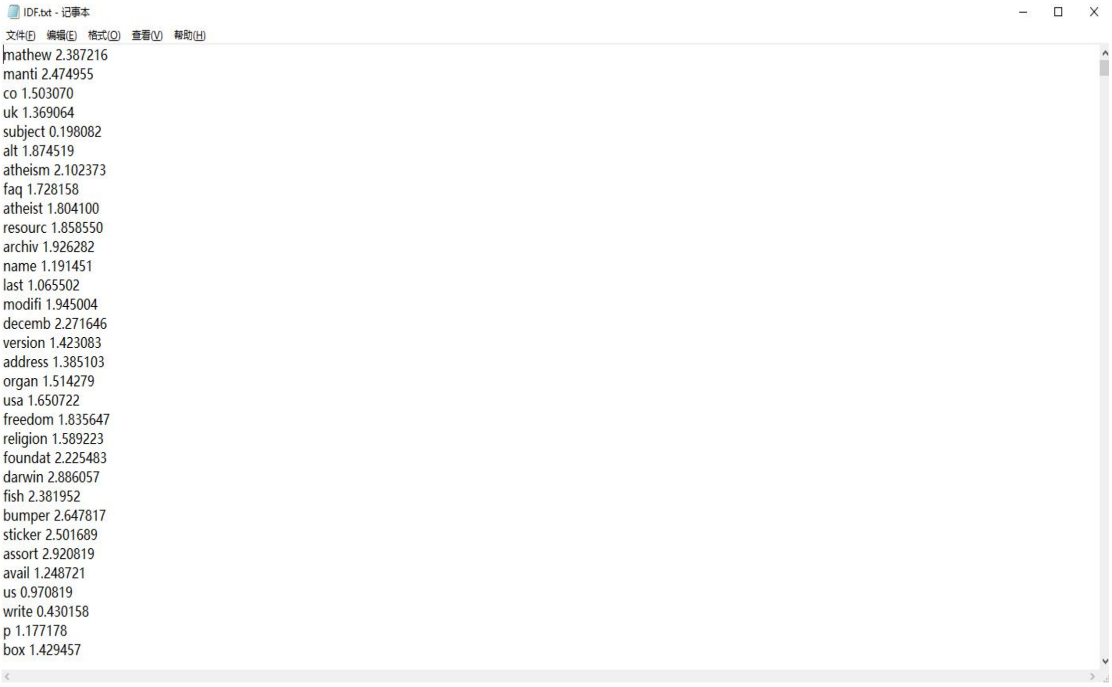

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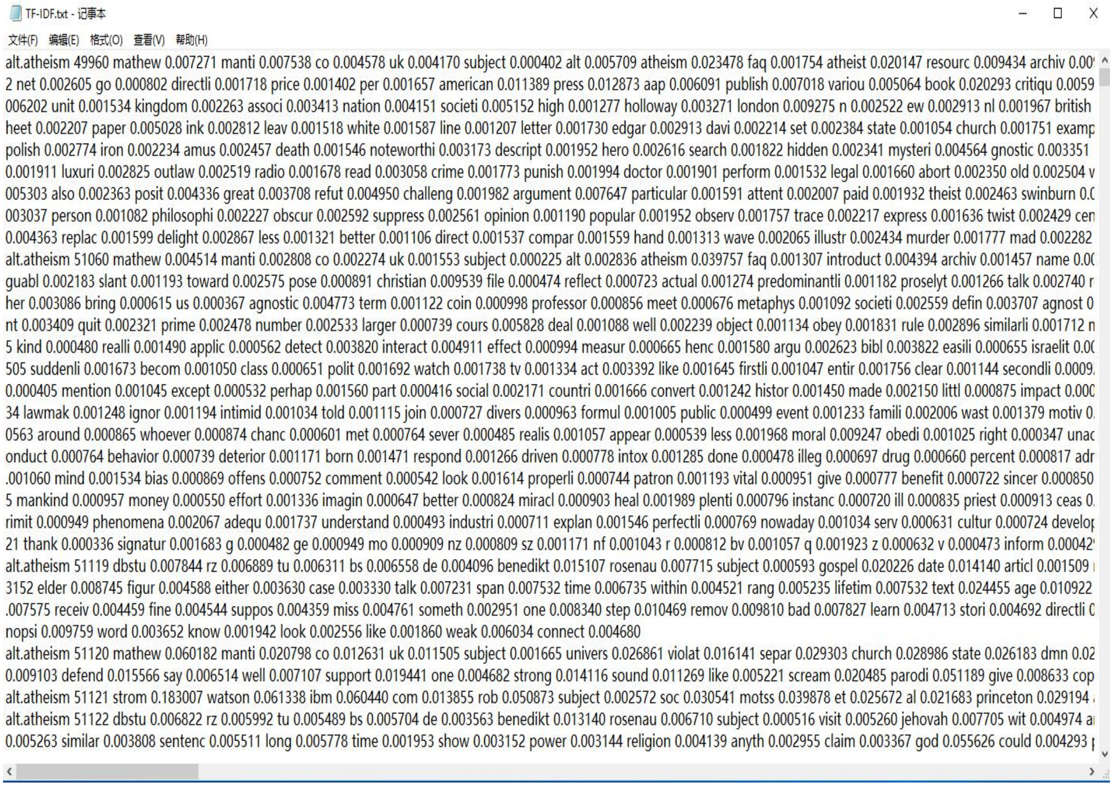
TF-IDF



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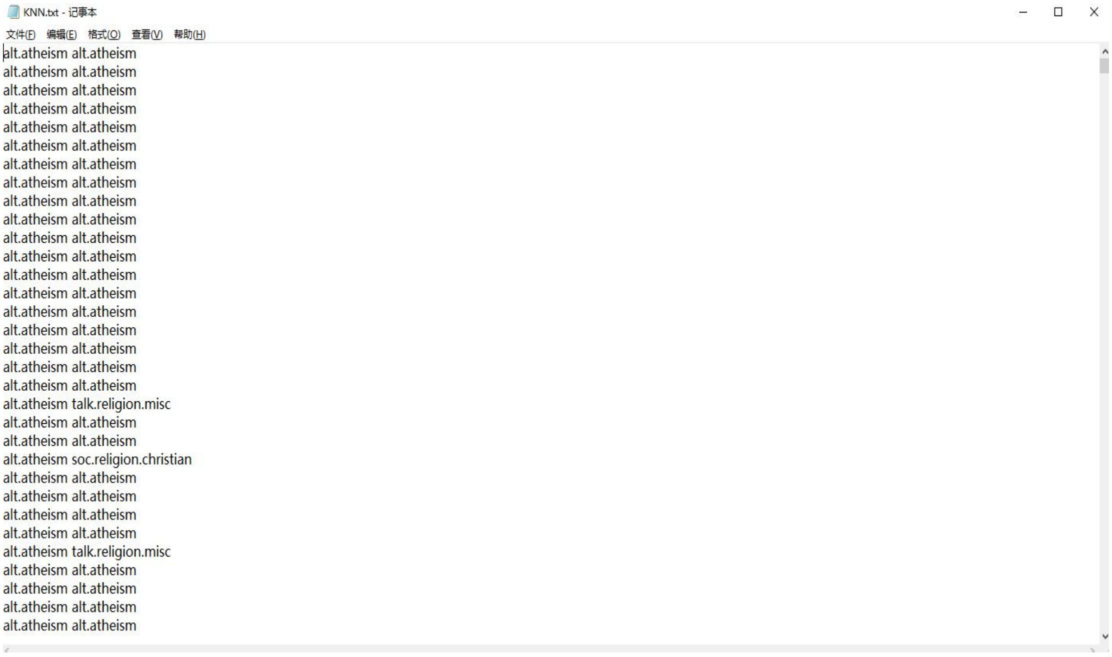
Knn



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