Gmail email filtering

Gmail's email categorization is one of the more common, newer implementations of NLP. Based on the contents of emails, the algorithm determines whether they belong in one of three categories (main, social, or promotional). Gmail uses Machine learning techniques and automatically learns which category to assign emails by "reading" words in subject lines and associating them with predetermined tags. In the process it uses NLP to extract features, then using these features from the test dataset Gmail trains various machine learning algorithms and predicts which categories to select for each email. Tasks involve syntactic and semantic analysis, used to break down human language into machine-readable chunks. Some of the main sub-tasks of both semantic and syntactic analysis: Tokenization, Speech tagging, Dependency and Constituency Parsing, Lemmatization, Stop words, Named Entity Recognition (NER) etc.

Automated essay scoring (AES)

To develop an automated essay grading or scoring (AES) model, some of the basic steps to be followed are data processing, feature extraction, feature selection, word-to-vector conversion, using machine learning models to train and test data, etc. These steps can be completed using various NLP models i.e., Tokenization, lemmatization, features extraction - POS, word count, sentence count, etc., Named Entity Recognition (NER), finding similarities, importance of the word, vectorization. Then train and test data via machine learning algorithms i.e., vector classification, linear regression, Regression Trees etc.

NLP methods for Medical Question Answering

An NLP question answering system can be used to provide patients and doctors with a quick means of finding answers to medical questions. The system can be trained to understand medical terminology and answer questions about symptoms, treatments, and diagnoses. The nlp subtasks to follow are Question and Answering, question entity recognition (NER), lemmatization, semantic analysis, extract data, relation extraction, response collection, use test dataset and train using various machine learning algorithms, rank and selection of most accurate answer.

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