

Grammarly

Grammarly is a desktop application that uses NLP to improve users' writing as they type. It checks and corrects grammar, syntax and spelling in real time and can offer suggestions on tone and style. It can be used while writing documents, composing emails or creating social media content. The overall aim of the application is to help the user improve their written communication.

Grammarly is a very data rich application. From its inception it used machine learning techniques to refine and constantly improve its model. By raising potential errors in grammar and spelling in real time, suggesting corrections and then asking the user to accept or reject them, the engineers were able to train the model as it was being used. This built in feedback served to build a vast bank of data on how users write that could further be used for training and refining new models.

Grammarly uses text simplification techniques similar to those found in spaCy. In particular, the program relies on lemmitization and dependency parsing to break down complex words and phrases into simple ones, and POS (parts of speech) tagging to make a syntactical analysis of the text written by the user. By comparing this analysis to a set of pre-existing grammatical rules, the application is able to identify aspects that may need corrections and offer suggestions.

Among other NLP applications that Grammarly uses is sentiment analysis. Trained models based on existing data are used to infer tone (or emotional intent) from the written text. The model then attempts to determine the format of the document (a formal letter, friendly chat or legal text for example) and make suggestions to clarify that the tone of the text matches the format.

While supervised machine learning is implemented to refine these models based on user feedback, Grammarly's tone detector also implements deep learning and neural networking techniques to allow the model to make decisions and train itself. This is an example of unsupervised machine learning in action.

The tone adjustment algorithm distinguishes it from built in spelling and grammar checking applications such as the one I am using to write this essay.