A SYSTEM TO DISTINGUISH NATIVE AND NONNATIVE WRITTEN ENGLISH

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ABSTRACT

Grammar correction tools intended for native speakers of English are common, and those directed towards ESL students are becoming increasing common as well. However, there is no current software that provides grammatical feedback to advanced learners of language, individuals who are generating grammatically correct samples of the target language, yet whose output is still distinguishable from that produced by a native speaker. This study focuses on the development of such a system. In particular, this study shows how text can be mined for grammatical features which can then be used in machine-learning algorithms to classify the text as having been generated by a native or nonnative speaker. Using a number of native and nonnative corpora of written English as training and testing data, this study shows that such classification can be done with a high level of accuracy. Three separate experiments are presented, each dealing with a different method of extracting features from automatically-generated parse trees and dependency graphs in such a way that that data can be used to train a decision-tree classifier. These classifiers are then analyzed to determine the linguistic significance of the features used. This study also proposes and describes an interactive system that would take advantage of this classification process to provide the learner with detailed information on which aspects of his or her language mark him or her as a nonnative speaker.

KEYWORDS: language acquisition, English, Spanish, document classification

This abstract is approved as to form and content

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